

Vol. 1

September 1948

No. 5

The Review
of
Metaphysics

A QUARTERLY

FIVE DOLLARS YEARLY

SINGLE COPIES : ONE DOLLAR FIFTY CENTS

The Review of Metaphysics

A Philosophical Quarterly

Editor _____ Paul Weitz

Managing Editor _____ Eli Karlin

in cooperation with

Fr. Philibert Boenzer _____ Anton Pegis

Charles Hartshorne _____ John Wild

Otis Lee _____ F. S. C. Northrop

SEPTEMBER 1946

CONTENTS

ARTICLES

	Page
Donald S. Mackay, <i>On Supposing and Presupposing</i> _____	1
Willard V. Quine, <i>On What There Is</i> _____	21
Erich Fromm, <i>Time and Eternity</i> _____	39
Eli Karlin, <i>The Nature of Connection</i> _____	53
George A. Lindbeck, <i>A Note on Aristotle's Discussion of God and the World</i> _____	99

REVIEW-ARTICLE

Marcel Mauss, <i>The Meaning of Human Action</i> _____	107
--	-----

Address all correspondence to The Review of
Metaphysics, 201 Lindley Hall, Yale University,
New Haven, Conn.

Published by The Review of Metaphysics, Inc.

Edited in Canada by

Copyright 1946 by The Review of Metaphysics

THE REVIEW OF METAPHYSICS

A Philosophical Quarterly

VOLUME II

SEPTEMBER 1948

NUMBER 5

ON SUPPOSING AND PRESUPPOSING¹

That metaphysics is the study of presuppositions, and not ontology or a theory of being as being, is the view that has been least vulnerable to attack from the time of Hume to the present. If there were still any need of justifying metaphysics after its notable successes in the past generation or two, this is the conception of it that I should want to defend, although I confess that I am not and never have been entirely at ease with it. What troubles me is not so much the criticism of metaphysics by its opponents who, finding it not to be science, syntax, semantics, nor pragmatics, would be inclined to reject it in any event. My difficulties are rather with the arguments of those who accept metaphysics as a valid type of inquiry and then proceed to confine it to a study of presuppositions. Something of genuine importance is left out of the tradition when this view is maintained and the meaning of presuppositions is construed only in their logical or in their psychological aspects. Are we to understand that the making of a presupposition is nothing more than the making of an assumption? Is it merely the mental act of stipulating or defining the grounds of our reasoning? If so, presuppositions are reduced to the tautologies of logic and mathematics, on the one hand, and to the

¹ Read in part before the Twenty-first Annual Meeting of the Pacific Division of the American Philosophical Association at the University of California, Los Angeles, December 29-31, 1947.

merely ideational conditions of knowledge, on the other. In this formulation, we have deprived metaphysics of its most important objective, namely, the disclosure of the factual and independently real conditions on which all of our thinking or supposing depends. Conceivably, there might be a metaphysics without ontology, but hardly a metaphysics without any objective reference to a reality beyond its own suppositions.

The case for a "metaphysics without ontology" has been argued persuasively by the late R. G. Collingwood.² The crux of his argument is in the nature of presupposing. What are presuppositions in his view of them? They are historical facts "made" by persons or groups of persons on particular occasions or groups of occasions, "in the course of this or that piece of thinking," whenever questions arise and answers are propounded. In other words, the making of a presupposition is involved in the historical occurrence of a problem, and a question about a presupposition, and how it is "made," is a question of the way in which problems arise on particular occasions or groups of occasions.³ Metaphysics, as a study of presuppositions, is historical inquiry into the conditions under which problems have arisen.

It is not to be inferred that metaphysics, because it is a species of historical analysis, is only a study of temporal antecedents of problems in their history. Collingwood speaks of the *logical* priority of presuppositions, although much that he has to say about "presupposing" suggests some sort of *psychological* priority. Clearly, his notion of presupposing is not equivalent to the notion of implication. Some presuppositions are, others are not, implied by and logically prior to their related questions.⁴ Only propositions imply, and the implic-

² *An Essay on Metaphysics* (1940, Oxford) and *The Idea of Nature* (1945, Oxford).

³ His account of the presuppositions under which problems arise, and which, as presuppositions, are related only to problems, is plainly reminiscent of Dewey's theory of initial conditions in an "indeterminate situation," which is to be transformed into a "determinate situation" through inquiry.

⁴ That Collingwood's thought vibrates between the notions of logical and psychological priority can be seen in the following passages from *The Idea of Nature*. In criticizing Alexander's doctrine of space-time "as

ation of a proposition is another proposition; but not every presupposition, in Collingwood's view, is or can be propounded. A proposition is "that which is stated (i.e., that which can be true or false)." He holds (and correctly, I believe) that "every statement that anybody ever makes is made in answer to a question."⁵

Collingwood illustrates the making of a presupposition in an example from his own archaeological surveys on the remains of Roman Britain, in which work he had frequent occasion to use a tape-line. The approximate accuracy of his "old 66-foot tape" was presupposed whenever, in a piece of surveying, he asked, "What is the distance between these two points?" The presupposed accuracy was, in his view, an unquestioned assumption. However, in checking the reliability of the tape, possibly stretched beyond its due proportions in several years of service, the presupposition of approximate accuracy ceased to be an unquestioned assumption. It became, instead, an affirmative answer to the question he was asking while checking the tape.⁶ Such a presupposition, related to one question as its presupposition and to another question as its answer, is called a "relative presupposition." Relative presuppositions are not the subject matter of metaphysics. Metaphysics is concerned only with presuppositions that are "absolute," and an absolute presupposition is defined as "one which stands relatively to all questions to which it is related, as a presupposition, never as an answer." Absolute presuppositions, says Collingwood, are not verifiable and they are not propositions. "To

logically prior to the categories," he asks whether "categorial characteristics pervading nature as a whole do not *imply* something outside nature, something prior to space and time" (pp. 164-165). But later Collingwood is led to conclude "that natural science as a form of thought exists and always has existed in a context of history, and *depends on historical thought* for its existence" (p. 177), italics added. He believes that logicians have tended to neglect the theory of presupposition and that "this is perhaps why the theory of metaphysics, which depends on it, has been allowed to remain in an unsatisfactory condition" (*Essay on Metaphysics*, p. 23), but he was himself far from clear about the import of a presupposition in this Crocean theory of metaphysics.

⁵ *Essay on Metaphysics*, pp. 23, 25.

⁶ *Ibid.*, pp. 29-30.

be propounded is not their business; their business is to be presupposed."⁷

To say that presuppositions are "absolute" is not to deny, but rather to affirm their historical relativity. Relative and absolute presuppositions are alike "relative," but obviously not in a sense of relativity other than that in which some presuppositions are said to be relative, and others absolute. The latter, no less than the former, are relative to the changing historical context in which the related questions arise.⁸ The subject matter of metaphysics is marked off and distinguished by a certain relationship holding between questions and their presuppositions. It is simply the relationship of being presupposed by a question, and not by any proposition, implied or propounded, in answer to a question. Let us consider two examples of the distinction between absolute and relative presuppositions, one from early Greek philosophy, the other from Newton's *Principia*.

In the problems of the early Greek thinkers, nature (*phusis*) was an absolute presupposition, whereas in their several theories of coming-to-be and passing-away, as answers to these prob-

⁷ *Ibid.*, p. 33.

⁸ No contradiction is involved in the apparent paradox that a presupposition is both absolute and historically relative. To object to the description of all presuppositions as historically relative, because some presuppositions have been described as absolute and not relative, is to violate the vicious circle principle. The elenchus, committing this fallacy, would run as follows: "You have said that all presuppositions are relative?" Yes, historically relative. "But you have also said that some presuppositions are absolute?" Yes. "And the other presuppositions are relative?" Yes. "And the absolute presuppositions are not the same ones as the relative presuppositions?" Obviously not. "Then, what would you say of the statement that all presuppositions are relative? Is this a relative or is it an absolute presupposition?" In effect, this is to ask whether the relativity of all presupposition is itself a relative or a non-relative (absolute) presupposition. Let ϕx mean "x is relative". Then, to ask whether the relativity of x is relative or absolute is to ask whether there is a propositional function, $\phi (\phi x)$. The question is meaningless, according to the vicious circle principle, that "whatsoever involves all of a collection must not be one of the collection". Thus, metaphysics may be consistently described as a study of absolute presuppositions without implying that it negates or transcends the relativity of all historical inquiry.

lems, the presupposition of elements (*stoicheia*) was relative. That there was a moist element and a dry element, an element of air and an element of earth, and so forth, was presupposed in certain questions the Ionian thinkers had been asking about the process of change and its permanent structure, but an explicit theory of elements, as such, can hardly be said to have existed before Empedocles and Anaxagoras. Not until Leucippus thought of the atomicity of the elements, and Democritus compared them to the letters of the alphabet, and so named them, was the notion of material elements clearly formulated. The theory of atoms, differing only in their elementary shape, order, and position, was then propounded as an answer to the earlier problems of permanence and change. The presupposition of material elements was relative in the sense that their existence and characteristics were related to certain questions as a presupposition and to other questions as an answer. The nature of things was not, however, merely supposed or assumed in the various theories of coming-to-be and passing-away. Nature was a primary datum in early Greek philosophy. It was no answer, and no part of an answer, to say that things were in motion or at rest, changed or remained the same, because it was in their *nature* to be or to do so. Nevertheless, there could have been no significant agreement or disagreement between one answer and another apart from this presupposition. One theory was consistent or inconsistent with another only in so far as both were relevant to the same question arising under the same conditions. It is impossible to find out what a man means merely by analyzing his spoken or written statements, even though he had expressed himself with complete command of his language and with perfect sincerity. In order to discover the import of any statement, it is necessary to understand the question which it was intended to answer. For no two propositions can contradict one another unless they are answers to the same question, and questions are the same only if their presuppositions, and not merely their verbal or symbolic forms, are the same.⁹

⁹ "To say that a question 'does not arise' is the ordinary English way of saying that it involves a presupposition which is not in fact being made. A question that 'does not arise' is thus a nonsense question: not intrinsically nonsensical, but nonsensical in relation to its context, and specifically to

The distinction between absolute and relative presuppositions is clearly exemplified in the celebrated Scholium to Definition VIII of Newton's *Principia*. He has been criticized for introducing theological prepossessions into a purely scientific treatise. He is supposed to have *assumed* that there is an "absolute, true, and mathematical time," an absolute space, which "remains always similar and immovable," and absolute motion as "the translation of a body from one absolute space into another." According to his critics, these were extraneous assumptions, unwarranted by his observations in kinematics. But it should have been clear enough from his explicit statements in the Definition and the Scholium that absolute time, space, and motion were not stipulated as subjects for definition,¹⁰ nor did he propose to employ them as postulates in the solution of his problems and demonstration of his theorems. With few exceptions,¹¹ his proofs depended only on relative quantities and sensible measures of time, space, and motion. There was no occasion for assuming or supposing the existence of absolute time, space, and motion in the answers that he was to give to his questions, since he had already found them as absolute presuppositions in the problems that he had taken over from Galileo and others in the 17th century. Historically, the problems of Newtonian physics arose under the *a priori* conditions of a geometrical order in time, space and motion. The problems were to be solved experimentally on the assumptions of Euclidean geometry, and later, after further refinements of the data, on the assumptions of the non-Euclidean geometries of Lobatchevski, Bolyai, Riemann, and Gauss. It was not a

its presuppositions. A person who asks another a question which does not arise is talking nonsense and inviting the other to talk nonsense in the same vein." *Essay on Metaphysics*, p. 26. Cf. *Speculum Mentis* (1926, Oxford), p 281: "To suppose that one word, in whatever context it appears, ought to mean one thing and no more, argues not an exceptionally high standard of logical accuracy but an exceptional ignorance as to the nature of language."

¹⁰ "I do not define time, space, place, and motion," he says, "as being well known to all". *Newton's Principia, A Revision of Motte's Translation*: by Florian Cajori (1946, Berkeley: University of California Press), p. 6.

¹¹ E.g., the experiments with the rotating bucket of water and the revolving globes.

question of the mathematics being right or wrong, but rather a question of making the right choice of a mathematics to fit different groups of experimental facts.¹² Newton may have assumed, with Euclid, that space is box-like, and that absolutely straight lines are the shortest distances between fixed points in an immovable space, but he did not *assume* that space is geometrical. He discovered the fact in the conditions of his problems, just as he discovered the presupposition of true motions, as distinguished from the apparent motions of sensible bodies, in his problems of kinematics. "But how we are to obtain the true motions from their causes, effects, and apparent differences, and the converse, shall be explained more at large in the following treatise. For to this end it was that I composed it."¹³ He could hardly have expected "to obtain the true motions" had the existence of those motions not been presupposed in his problems.

A possible objection is that, if questions about absolute presuppositions can be answered and if significant statements can be made about them, then such presuppositions do stand relatively to questions as *answers*, and not exclusively as their presuppositions. When we discern the characters of space and time as absolute presuppositions, may we not consistently say of them that they are *a priori*, categorial, fundamental, pervasive, or whatever else, in answer to metaphysical questions? And if they are, the presuppositions are relative, not absolute, in Collingwood's notation. But if they are not *a priori*, categorial, and the like, then the "absolute" presuppositions would seem to be no more than meaningless utterances in response to pseudo-problems, as critics of positivistic persuasions have contended.

The objection may be met by distinguishing between the statement of a proposition that space and time are presupposed in the formulation of physical problems, and the statement of a

¹² "If we find that our geometry fails even in the slightest degree to coincide with our observations in kinematics, we must beware, for it will surely fail again; and when it does, we must not say that our mathematics is wrong, but only that we have chosen the wrong mathematics!" Gilbert N. Lewis, *The Anatomy of Science* (1926, New Haven: Yale University Press), p. 72.

¹³ *Op. cit.*, p. 12.

supposition about, or a hypothetical description of, the absolutely presupposed spatio-temporal conditions. In short, we must distinguish here between (a) presuppositions, as the historical conditions under which questions arise, and (b) assumptions, which may have been presupposed in certain questions, but are also propounded or implied in answer to other questions.

It is true that Aristotle took "nature," which had been an absolute presupposition of early Greek philosophy, to be an assumption, a relative presupposition, in his answers to the problems of causation, elements, and categories. We find in the *Metaphysics* such imposing tautologies as that nature is "the source of the movement of natural objects."¹⁴ In other words, natural objects move as a result of being natural!¹⁵ The statement has its place in Aristotle's programme because he was analyzing the use of the term, *nature*, in his predecessors' formulation of their problems. But the fact that the nature of things, presupposed in the problems of his predecessors, could be regarded as a term in propositions, and so subject to logical analysis, indicates how restricted was the scope of his programme through the requirements of a propositional logic. In such a logic there is no place for a formal distinction between question and answer.¹⁶ A question is merely its own answer in

¹⁴ *Met.* Δ. IV. 1015a, 15-19.

¹⁵ There is a similar futility in recent attempts to define naturalism. Analysis of the basic assumptions and verified results of the natural sciences is supposed to disclose the natural *qua* natural — but in distinction to what? Contemporary philosophers have failed to agree on the meaning of naturalism and so to find adequate "categories" or "categorial features" of nature, as contrasted with the non-natural, the supernatural, the preternatural, or whatever else is to be rejected by a thoroughgoing naturalist in his "natural piety". The failure results from a confusion of absolute with relative presuppositions. Naturalistic philosophers have looked for categories as implications in the assumptions of the sciences, instead of seeking them in the historical conditions under which the problems of the sciences have arisen.

¹⁶ Reichenbach's "analysis of conversational language" is an outstanding exception (*Elements of Symbolic Logic*, 1947, New York: The MacMillan Company, Chap. VII, section 57). However, a question is symbolized only as a statement with a "question-mark operator" attached. Questions are said to be in "a pragmatic mood," because "inviting" or "expecting" an argument, propositional function, or term in reply. "In a

reverse. Aristotle ignores the fact, so frequently attested by Plato, that a problem discloses more than is ever assertible in any answer or set of answers to it. The Socratic logic of inquiry, or dialectic, is subordinated to a logic of proof in Aristotle's theory of the syllogism. Presuppositions or first principles are then regarded as demonstrable answers to questions, and the most comprehensive answer to all questions is ontology, an apodictic science of being as such.

Metaphysics has acquired a bad name through its attempts to derive absolute truths from debatable premisses. Absolutes in philosophy have suggested a finality that puts a stop to inquiry, philosophical as well as scientific. Absolute idealism has been a disguised religionism; absolute materialism, a disguised irreligionism. Each has been a defense of dogma against philosophic doubt and, in this way, a justification of mental as well as moral holidays. However, absolutes in the answers to questions are one thing, and absolutes in the presuppositions of questions quite another. The former impede philosophical inquiry, the latter make it possible and give it direction. The claim to *a priori* necessity in metaphysical theories has tended to discredit the search for, and the systematic interpretation of, the *a priori* or categorial conditions in the questions, to which the theories are presumed to be answers. For instance, to deny *a priori* certainty in our empirical knowledge of space and time, when our judgments are synthetic and not merely analytic, is not to deny that space and time are *a priori* or categorial features of existence, by whatever metaphysical or anti-metaphysical theory they may be interpreted. In explaining the nature of space and time philosophically, we are not explaining them away. Any significant question about the place of an event or the position

question asking for an argument we state a propositional function, expecting the listener to supply the satisfying argument. The propositional function is chosen in such a way that there is *only one satisfactory argument* (*ibid.*, p. 340, italics added). This transformation of questions into statements misses the logical import of a question in the actual course of inquiry. A question has a topical rather than a propositional import. It characterizes a situation in which search for a satisfying argument originates, and not any proposition or propositional function in which an argument is eventually stated, even though it be stated in reverse.

of a body necessarily involves a reference to the space that it occupies and its relations to other parts of space, whether the space be conceived as Euclidean or non-Euclidean. Any significant question about the velocity and acceleration of falling bodies necessarily involves a reference to periods of time in which they fall, whether the time be conceived as real or ideal, as substantive, relational, or perspectival. Metaphysical inquiries are no less valid and fruitful as a study of presuppositions because there have been some notorious disagreements in the formulation of them.

I find Collingwood's theory of a "metaphysics without ontology" unsatisfactory because of its inherent subjectivism. He regards metaphysics as a historical science and he disclaims any pretense to a knowledge of being that transcends the relativity of the natural sciences in their changing historical conditions.¹⁷ When we ask of him what positive results can be expected of his metaphysics, apart from a history of scientific theories, his reply is strangely disappointing. Of the study of absolute presuppositions he writes: "To be propounded is not their business; their business is to be presupposed. The scientist's business is not to propound them but only to presuppose them. The metaphysician's business . . . is not to propound them but to propound the proposition that this or that one is presupposed."¹⁸ Collingwood fails to explain how a study of presuppositions can disclose anything of real importance in the problems to which they are related, or how it can throw any light on the human values and ideal possibilities to which a solution of these problems might lead. Although a return to the great tradition of constructive philosophy in the 17th century — "the century of genius," as Whitehead describes it, — may be neither possible nor desirable, something of comparable

¹⁷ In the four concluding chapters of *An Essay on Metaphysics* he tries to show how "the Transcendental Analytics can be read as a history of the absolute presuppositions of the natural sciences from Galileo to Kant himself" (p. 246). *The Idea of Nature* (published posthumously from an unfinished manuscript) was intended to be a comprehensive history of the absolute presuppositions of the natural sciences from the early Greek philosophers to Alexander and Whitehead.

¹⁸ *An Essay on Metaphysics*, p. 33.

importance in its objectives might have been accomplished. In this disillusioned age, with its moral and intellectual uncertainties, the need is more urgent than ever for the kind of systematic inquiry that gave rise to a rational and humane appraisal of scientific discoveries in the 17th century. We lack an intelligible picture of a world in which the grounds and possibilities of our increasing technical knowledge can be understood and appreciated with discriminating judgment. Our judgments of value are halting and defective in the lack of that insight which Spinoza called "the knowledge of the union existing between the mind and the whole of nature."

"At present it is the fashion to despise Metaphysics, and the poor matron, forlorn and forsaken, complains like Hecuba", etc. If it is again reduced to this predicament, it will be in the kind of subjectivism that Collingwood espouses. He can find nothing in a presupposition except the mental act of making a supposition when a question is asked. Presupposing for him is in the thinking of the questioner, and not in the existential conditions, cultural as well as physical, under which problems arise.¹⁹ "Whenever anybody states a thought in words," he says, "there are a great many more *thoughts in his mind* than are expressed in his statement. Among these are some which stand in a peculiar relation to the thought he has stated: they are not merely its context, they are its presuppositions."²⁰ Again, when speaking of the analysis of a specific problem, he says that only "when I reflect upon it, do I come to see that

¹⁹ It was in this existential sense that the Schoolmen spoke of presuppositions (*præsuppositiones*) in their questions. Thus, Duns Scotus in his *De Rerum Principio, Quæstio V.*, criticizing the Thomist doctrine that the proximate matter is the *principium individuationis*, writes: "... modus agendi sequitur modum essendi; sicut ergo esse aliquorum agentum de necessitate requirit aliquid possibile in quo recipitur, sic et actio eorum *de necessitate præsupponit* aliquid ex parte passi, et aliquid possibile in quo recipiatur. Modus ergo agendi aliquorum agentium, est ex præsuppositione potentiaæ passivaæ; sed Deus, quia est ipsum esse, sicut suum esse non requirit aliquid possibile in quo recipiatur; sic et modus agendi ejus, et sua actio, non de necessitate requirit aliquid, in quo possit recipi, sed potest de nihilo *nullo præsupposito producere*" (italics added). Albertus Magnus speaks of presupposing in a similar sense, as requiring a necessary condition.

²⁰ *Op. cit.*, p. 21 (italics added).

this was a presupposition *I was making*, however little I was aware of it at the time."²¹ Collingwood was a noted historian, having achieved some success in reconstructing the actual problems which the Romans had encountered in their occupation of Britain. He could scarcely have believed that the pre-historic conditions before the Roman occupation were as subjective as Collingwood, the philosopher, took presuppositions to be in his theory of metaphysics. As a historian, he was able to show that the Roman wall had been built, not as a barrier against the invasion of the northern tribes, but as a sentry walk, raised to a commanding height for the detection of approaching raiders. The Picts and the Scots, whose existence extended far back into the pre-history of Britain, were certainly not mere thoughts in the minds of the Romans. Much less could it be supposed that the pre-historic conditions of early British history were *made* by the historian out of his own reflections in reconstructing its problems. The pre-history of Britain may have been as conjectural as the most sceptical of historians might suspect, but its status was not that of a mere conjecture. Its existence was that of any other *sine qua non* condition of that which is known to exist. The pre-history of the Celtic tribes in Britain was a necessary limiting condition for the beginnings of its history. Pre-historical conditions are related to historical problems as presuppositions are related to problems in the natural sciences, namely, by a relation of necessary involvement. The limiting conditions are objectively discovered, not made or posited by an act of the human will, nor entertained as unexpressed thoughts in the analysis of problems, whether problems in the history of men and nations, or problems in the advancement of natural knowledge.

There is, however, one important difference between the involvement of necessary preceding conditions in historical problems and the involvement of presuppositions in the problems of the natural sciences. In the history of events the involvement is *temporal antecedence*, and the pre-historical conditions are *chronologically prior* to the historical problems. But absolute presuppositions are not the temporal antecedents of problems in

²¹ *Ibid.*, p. 22 (italics added).

the natural sciences. Are we then to regard their involvement as a relation of implication, and their priority as logical? There is a third alternative besides chronological and logical priority. Presuppositions are involved in problems as necessary conditions for inquiry. Their priority is *heuristic*. They are first in an order of investigation, and not in an order of events nor in an order of propositions. Their priority is that to which Socrates was referring in the *Meno* when he said, "I have now to inquire into *what* something is without knowing *that* it is what I suppose it to be" (86E). It is that kind of priority to which Galileo was referring when he said that a question, correctly formulated, "gives the answer of itself" (*da per se*). Absolute presuppositions, the subject matter of metaphysics, are the necessary and limiting conditions under which problems arise and search for solutions is instituted. They are discernible in the analysis of the questions to which they are related, and not in the analysis of any assumptions on which possible answers depend. Absolute presuppositions are not made or supposed by the human mind in the asking and answering of its questions. Man supposes; God or Nature presupposes.

The study of presuppositions, as a realistic and constructive inquiry, takes its point of departure from the existential conditions under which problems arise, and not from any idealistic constituents of thought in the tentative or verified solutions of problems. Definitions, classifications, concepts, assumptions, axioms, postulates, theorems, hypotheses, and the like, are *supposals*, not absolute presuppositions. They are relative to some questions as presuppositions and to other questions as answers. We seek metaphysical first principles in vain when we look for them in the analysis of our own real or supposed knowledge of nature ("knowledge" in the sense of *knowing* rather than the *known*), for we can find no more than that which has already been put into the subject matter of analysis by stipulation, namely, the tautologous or definitional expression of meanings implicit in the formulation of that knowledge. We shall be able to find no more than ideas or conceptions of "being", "substance", "causality", and the like, as relative "categories" of explanation, arbitrarily selected, and not the being, substance, and causality that are involved as absolute presuppositions of

inquiry. If, instead, we start looking for presuppositions in the heuristic rather than the demonstrative conditions of knowledge, we may be better able to discern the pervasive features of existence, which philosophers have traditionally and, I believe, correctly declared to be *a priori* or categorial. In other words, the universality and necessity of such pervasive features of existence are to be found in the problematic and initially indeterminate subject matter of inquiry, and not in the verified and determinate knowledge that we gain as a result of inquiry.²²

"Philosophers can never hope finally to formulate these metaphysical first principles," says Whitehead. "Weakness of insight and deficiencies of language stand in the way inexorably But, putting aside the difficulties of language, deficiency in imaginative penetration forbids progress in any form other than that of an asymptotic approach to a scheme of principles, only definable in terms of the ideal which they should satisfy."²³ We may agree that only such a tangential interpretation is possible in the study of metaphysical first principles. Their formulation as ideal requirements for the solution of problems depends, however, on their prior discovery as ontological conditions in the presuppositions of problems.

What has been said about the ontological nature of such presuppositions needs a more detailed explanation. I offer the

²² Cf. Paul Weiss, *Reality* (1938, Princeton University Press), p. 284, and also *Nature and Man* (1947, New York: Henry Holt and Company), pp. 181 ff., in which analysis of the terms which he calls "metaphysicals", (such words as "is", "and", "or", as well as the categorials, "being", "substance", "causality", and the like) is said to yield a knowledge of absolute or fundamental presuppositions in "the scheme of things entire". However, it is not clear to me in what respects such an analysis, in Dr. Weiss' view, differs from a logical analysis of the meaning of these terms, or how it can lead to any result other than a tautologous expression of semantic or syntactical rules for the employment of the words. If, instead, these "metaphysicals" refer to conditions under which significant questions are asked and real problems actually arise in the course of inquiry (e.g., "Is this chemical substance an element or a compound?", "Is this speck of light in the heavens really a comet or is it another planet?", "What causes are necessary to bring about the visible effects in the interference of light?"), then the ontological significance of these words becomes apparent.

²³ Alfred North Whitehead, *Process and Reality* (1936, New York: The MacMillan Company), p. 6.

following comments without the slightest pretense to anything like an exhaustive or comprehensive account of first principles as involved in problems. The comments are intended only to illustrate (quite inadequately) what I have called the "heuristic priority" of absolute presuppositions, and this only with reference to three of them in their traditional notation as *being*, *essence*, and *existence*.

1. *Being*.

a) Any problem, that is to say, any meaningful question, can be analyzed into two distinct ingredients and the grounds of their relation to each other. Whenever a meaningful question is asked, it is necessarily about something that is or has been undergoing change. Apart from change, nothing is significantly questionable, nothing is problematic. What "provokes thought" (gives rise to inquiry) is not the bare identity of something that is present to the senses or assumed for definition. It is, rather, the identity of something in its differences and in its relations to others. But there is no real difference that does not make a difference somewhere or somehow, and "making a difference" implies change.²⁴ The problematic is encountered in the experience that something is or has been changing in quality, moving from here to there, increasing or diminishing, progressing or retrogressing in one way or another. The two ingredients are, then, the *process* itself and a *singular* (designated by the demonstratives *this* or *that*, or by a proper name).

b) In epistemic or cognitional terms these two ingredients of a problem are distinguishable as the act of experiencing and that which is experienced.²⁵ But the progress which is expe-

²⁴ Difference, or otherness, implies change, even if it is only from an earlier to a later moment in an otherwise unchanging persistence, e.g., the persistence of some pervasive force or condition, such as gravitation. Eternity, by which I mean existence without respect to duration, is necessarily presupposed in any question concerning the extent and limits of a duration.

²⁵ In Alexander's distinction between "enjoyment" and "contemplation", united by the relation of "compresence" (Samuel Alexander, *Space Time and Deity*, 1920; London : MacMillan and Company, Ltd., Volume I, pp. 11 ff.). The distinction was suggested by Lloyd Morgan as that between an -ing and an -ed. But here the distinction seems to have a psychological rather than an ontological significance.

rienced in a given problem must be more than can be encompassed in the present act of experiencing, since it is in the having-undergone-change as well as in the now-undergoing-change that the real difficulties arise. By the *singular* I mean that which has been called *particular substance*, *particular thing*, *real object*, *existent*, *qualified event*, or *actual entity*. The word *singular*²⁶ is preferable because comparatively free from debatable assumptions in rival theories of knowledge.

c) The grounds of relation between a singular and its process of change are signified by the word *being* in its most comprehensive sense. A process is such-and-such, i.e., "has being", in its relations to a singular that is moving, changing in quality, etc., or else has been moving, has changed in quality, etc., in the course of that process. A singular is this or that, i.e., "has being", in its relations to the process through which it is becoming or has become this or that.

d) Being is power. It is and is to be conceived not as a mere potentiality, but an actual power, both active and passive.²⁷ Being is power to affect and to be affected by another. It is power to move and power to be moved by another, power to increase the power and to be increased by the power of another, power to destroy and to be destroyed by another.

e) All evidence or proof of being is circumstantial, indirect, since it can be discerned only as the necessary grounds of a relation, not as any relation itself or its relata. It is the grounds of the relation between the process and the singular or singulars

²⁶ *Res singularis*, as employed by Occam and, afterwards, by Spinoza; "singular", as employed by Dewey, *Logic: the Theory of Inquiry* (1938, New York: Henry Holt and Company, Inc.), pp. 67, 123-127, 243, 248 ff.).

²⁷ We need not boggle over the term "actual power (that is) passive". A man in a region where there is no mosquito of the genus *Anopheles* may be susceptible to malaria, but only in the sense that his organism is so constituted as to be capable of infection by the bite of such a mosquito, which is, however, non-existent in that region. If he goes into a malarial region, his passive but only potential power is transformed from a mere organic susceptibility into an actual but still passive power to be infected by exposure to the bite of an existing insect in that region. Cf. above, note 19, Duns Scotus on *potentia passiva*. We have, then, (1) actual power (active), (2) actual power (passive), (3) potential power (active), (4) potential power (passive).

presupposed in any problem. Evidence of being is also circumstantial in a secondary and elliptical sense. As power to affect and to be affected by another, being pertains to circumstances, environments, inter-organic conditions, contexts, *milieux*, under which or within which singulars interact and processes are transacted.

f) From (c) and (e) it follows that being is not a singular, nor is it a collection of singulars. Being is not properly conceived as the totality of existence, for being is not *one*, either singly or collectively, nor is it *many*, distributively, since both unity and plurality presuppose being.

It does not follow that being is universal, much less that it is a universal or a form, idea, or pattern.

g) From (c) and (e) it follows also that being is not a process. Being is not properly conceived as a flux, as change, as evolution, as duration, finite or infinite, as activity of any kind, spiritual or material, mental or physical.

It does not follow that being is a state, that it is a fixed and immutable reality, that it is a plenum, that it is at rest or an unmoved mover, or that it is *causa sui*.

h) Being is indeterminate (infinite) power. It pervades the environments of singulars (all "things", animate or inanimate, and all "persons" or "minded organisms"). It is indeterminate power in processes through which singulars affect and are affected by one another.

Although indeterminate in itself (i.e., as presupposed absolutely in any problem), being is determinable in the interaction of singulars and in the transaction of specific processes. Being is the essence or intrinsic nature of each of the singulars in their varied and particular effects on one another.

The power of a singular is determinate either in meaning (potentially) or in actuality. It is determinate in meaning (*in posse*) as outcome of a process of inquiry, involving symbols and communication of ideas. It is determinate in actuality (*in actu*) as outcome of a process of interactive changes, involving increase or decrease of power. In this sense, "all determination is negation" — the power of one is diminished in compensation for a determinate increase in the power of another.

There are no antecedents of being. The indeterminate and determinable power, which is the nature of being, is entirely and without remainder in its consequences. As grounds of the relation between a singular and its process, being is determinable only *for* possible changes in the process and not *by* nor *from* antecedent changes.

Determinism rests on a confusion between being and causality.

2. *Essence and existence.*

I shall now consider in turn each of the two main ingredients of a problem with respect to their heuristic priority.

a) Any process, whatever its type or level of importance, can be analyzed into four distinct but inseparable constituents. First, the process is determinate and hence subject to certain limiting conditions: the process conforms to a *structure*. Second, in its determinate nature and within the limiting conditions of its structure, there is a certain range of variability: the process occupies a *field*. Third, particular changes or events within the field occur in a serial order, the terms of which are correlated in accordance with a general rule of transformation or principle of development: these serial correlations of changes or events are the *functions* of the singular or singulars in the process. Fourth, each particular change or event, while it has its inception in a problematic situation or state of affairs that is indeterminate (both with respect to the powers of singulars *in actu* and their meaning *in posse*) has its outcome in a determinate situation or state of affairs: there is a *concrescence* of powers, actual or potential.²⁸ The power of a singular to affect or be affected by another singular at an earlier stage of the process takes determinate shape at a later stage. The meaning of a singular in the possibilities of its interaction with others, at first surmised vaguely, if at all, becomes increasingly clear and definite in relation to facts in the course of inquiry.

²⁸ Concrescence of actual powers (real concrescence) is determinate increase and decrease of powers through the interaction of singulars. Concrescence of potential powers (ideal concrescence) is determination of meanings through inquiry. In Santayana's terms, the outcome of the former is a "concretion in existence", the outcome of the latter, a "concretion in discourse" (George Santayana, *The Life of Reason*, 1917, New York: Charles Scribner's Sons, Volume I, Chapter VII).

The field of the process, presupposed in any problem, is not an antecedently determined and circumscribed area of experience, but a range of indefinite variability to be explored. Structure is not a predetermined and *a priori* necessity of thought and activity, but the limiting conditions in a specific problem which give direction to subsequent inquiry. The functions through which successive changes are correlated are the activities still to be performed or the transformations of meaning still to be carried out, and the rules or principles which the functions involve are no more than the regularities in habitual sequences of similar activities and transformations in the past. Concrescence is determination of the powers of singulars in the process — actual powers through the subsequent changes of the singulars, potential powers through the meanings that the singulars acquire in the subsequent course of inquiry.

Thus, field, structure, function, and concrescence are initially and existentially problematic; they are eventually and essentially determinate in the intrinsic powers of singulars.

b) There is no existence apart from the determinate existence of singulars. To say that singulars exist in space and time (more exactly, in space-time) is to say that concrescence of power has a finite duration in the field of a process and that it is in conformity with the structure of that process. The temporal aspect of existence is in the succession of changes functionally correlated within the finite duration. The spatial aspect is in the limiting conditions of the structure to which the process conforms.

There is a logical space-time for the ideal concrescence (concrescence of potential powers) through which the meanings (possibilities) of singulars are determined. There is a physical space-time for the real concrescence through which the actual powers of singulars are increased or diminished.

Individuality (freedom) is any positive value acquired by singulars when several are united in one and the same process so as to be "simultaneously the cause of one effect."²⁹ Individ-

²⁹ Spinoza, *Ethics*, Part II, Definition VII: "Per res singulares intellico res, quæ finitæ sunt et determinatam habent existentiam. Quod si plura individua in una actione ita concurrant, ut omnia simul unius effectus sint causa, eadem omnia eatenus ut unam rem singularem considero."

uality is increase of intrinsic power in each of the singulars so united.

Subjection (constraint, bondage) is any negative value suffered by singulars when several are combined as hindrances to one another in the same process so as to be simultaneously the cause of many different and conflicting effects. Subjection is decrease of intrinsic power in each of the singulars so hindering one another.

Donald S. MACKAY.

University of California, Berkeley.



ON WHAT THERE IS *

A curious thing about the ontological problem is its simplicity. It can be put in three Anglo-Saxon monosyllables: "What is there?" It can be answered, moreover, in a word — "Everything" — and everyone will accept this answer as true. However, this is merely to say that there is what there is. There remains room for disagreement over cases; and so the issue has stayed alive down the centuries.

Suppose now that two philosophers, McX and I, differ over ontology. Suppose McX maintains there is something which I maintain there is not. McX can, quite consistently with his own point of view, describe our difference of opinion by saying that I refuse to recognize certain entities. I should protest of course that he is wrong in his formulation of our disagreement, for I maintain that there are no entities, of the kind which he alleges, *for me* to recognize; but my finding him wrong in his formulation of our disagreement is unimportant, for I am committed to considering him wrong in his ontology anyway.

When *I* try to formulate our difference of opinion, on the other hand, I seem to be in a predicament. I cannot admit that there are some things which McX countenances and I do not, for in admitting that there are such things I should be contradicting my own rejection of them.

It would appear, if this reasoning were sound, that in any ontological dispute the proponent of the negative side suffers the disadvantage of not being able to admit that his opponent disagrees with him.

This is the old Platonic riddle of non-being. Non-being must in some sense be, otherwise what is it that there is not? This tangled doctrine might be nicknamed *Plato's beard*; historically it has proved tough, frequently dulling the edge of Occam's razor.

* This is a revised version of a paper which was presented before the Graduate Philosophy Club of Yale University on May 7, 1948. The latter paper, in turn, was a revised version of one which was presented before the Graduate Philosophical Seminary of Princeton University on March 15.

It is some such line of thought that leads philosophers like McX to impute being where they might otherwise be quite content to recognize that there is nothing. Thus, take Pegasus. If Pegasus *were* not, McX argues, we should not be talking about anything when we use the word; therefore it would be nonsense to say even that Pegasus is not. Thinking to show thus that the denial of Pegasus cannot be coherently maintained, he concludes that Pegasus is.

McX cannot, indeed, quite persuade himself that any region of space-time, near or remote, contains a flying horse of flesh and blood. Pressed for further details on Pegasus, then, he says that Pegasus is an idea in men's minds. Here, however, a confusion begins to be apparent. We may for the sake of argument concede that there is an entity, and even a unique entity (though this is rather implausible), which is the mental Pegasus-idea; but this mental entity is not what people are talking about when they deny Pegasus.

McX never confuses the Parthenon with the Parthenon-idea. The Parthenon is physical; the Parthenon-idea is mental (according any way to McX's version of ideas, and I have no better to offer). The Parthenon is visible; the Parthenon-idea is invisible. We cannot easily imagine two things more unlike, and less liable to confusion, than the Parthenon and the Parthenon-idea. But when we shift from the Parthenon to Pegasus, the confusion sets in — for no other reason than that McX would sooner be deceived by the crudest and most flagrant counterfeit than grant the non-being of Pegasus.

The notion that Pegasus must be, because it would otherwise be nonsense to say even that Pegasus is not, has been seen to lead McX into an elementary confusion. Subtler minds, taking the same precept as their starting point, come out with theories of Pegasus which are less patently misguided than McX's, and correspondingly more difficult to eradicate. One of these subtler minds is named, let us say, Wyman. Pegasus, Wyman maintains, has his being as an unactualized possible. When we say of Pegasus that there is no such thing, we are saying, more precisely, that Pegasus does not have the special attribute of actuality. Saying that Pegasus is not actual is on a par, logically, with saying that the Parthenon is not red; in

either case we are saying something about an entity whose being is unquestioned.

Wyman, by the way, is one of those philosophers who have united in ruining the good old word 'exist'. Despite his espousal of unactualized possibles, he limits the word 'existence' to actuality — thus preserving an illusion of ontological agreement between himself and us who repudiate the rest of his bloated universe. We have all been prone to say, in our common-sense usage of 'exist', that Pegasus does not exist, meaning simply that there is no such entity at all. If Pegasus existed he would indeed be in space and time, but only because the word 'Pegasus' has spatio-temporal connotations, and not because 'exists' has spatio-temporal connotations. If spatio-temporal reference is lacking when we affirm the existence of the cube root of 27, this is simply because a cube root is not a spatio-temporal kind of thing, and not because we are being ambiguous in our use of 'exist'. However, Wyman, in an ill-conceived effort to appear agreeable, genially grants us the non-existence of Pegasus and then, contrary to what *we* meant by non-existence of Pegasus, insists that Pegasus is. Existence is one thing, he says, and subsistence is another. The only way I know of coping with this obfuscation of issues is to give Wyman the word 'exist'. I'll try not to use it again; I still have 'is'. So much for lexicography; let's get back to Wyman's ontology.

Wyman's overpopulated universe is in many ways unlovely. It offends the aesthetic sense of us who have a taste for desert landscapes, but this is not the worst of it. Wyman's slum of possibles is a breeding ground for disorderly elements. Take, for instance, the possible fat man in that doorway; and, again, the possible bald man in that doorway. Are they the same possible man, or two possible men? How do we decide? How many possible men are there in that doorway? Are there more possible thin ones than fat ones? How many of them are alike? Or would their being alike make them one? Are no two possible things alike? Is this the same as saying that it is impossible for two things to be alike? Or, finally, is the concept of identity simply inapplicable to unactualized possibles? But what sense can be found in talking of entities

which cannot meaningfully be said to be identical with themselves and distinct from one another? These elements are well high incorrigible. By a Fregean therapy of individual concepts, some effort might be made at rehabilitation; but I feel we'd do better simply to clear Wyman's slum and be done with it.

Possibility, along with the other modalities of necessity and impossibility and contingency, raises problems upon which I do not mean to imply that we should turn our backs. But we can at least limit modalities to whole statements. We may impose the adverb 'possibly' upon a statement as a whole, and we may well worry about the semantical analysis of such usage; but little real advance in such analysis is to be hoped for in expanding our universe to include so-called *possible entities*. I suspect that the main motive for this expansion is simply the old notion that Pegasus, e.g., must be because it would otherwise be nonsense to say even that he is not.

Still, all the rank luxuriance of Wyman's universe of possibles would seem to come to naught when we make a slight change in the example and speak not of Pegasus but of the round square cupola on Berkeley College. If, unless Pegasus were, it would be nonsense to say that he is not, then by the same token, unless the round square cupola on Berkeley College were, it would be nonsense to say that it is not. But, unlike Pegasus, the round square cupola on Berkeley College cannot be admitted even as an unactualized *possible*. Can we drive Wyman now to admitting also a realm of unactualizable impossibles? If so, a good many embarrassing questions could be asked about them. We might hope even to trap Wyman in contradictions, by getting him to admit that certain of these entities are at once round and square. But the wily Wyman chooses the other horn of the dilemma and concedes that it is nonsense to say that the round square cupola on Berkeley College is not. He says that the phrase 'round square cupola' is meaningless.

Wyman was not the first to embrace this alternative. The doctrine of the meaninglessness of contradictions runs away back. The tradition survives, moreover, in writers such as Wittgenstein who seem to share none of Wyman's motivations.

Still I wonder whether the first temptation to such a doctrine may not have been substantially the motivation which we have observed in Wyman. Certainly the doctrine has no intrinsic appeal; and it has led its devotees to such quixotic extremes as that of challenging the method of proof by *reductio ad absurdum* — a challenge in which I seem to detect a quite striking *reductio ad absurdum eius ipsius*.

Moreover, the doctrine of meaninglessness of contradictions has the severe methodological drawback that it makes it impossible, in principle, ever to devise an effective test of what is meaningful and what is not. It would be forever impossible for us to devise systematic ways of deciding whether a string of signs made sense — even to us individually, let alone other people — or not. For, it follows from a discovery in mathematical logic, due to Church, that there can be no generally applicable test of contradictoriness.

I have spoken disparagingly of Plato's beard, and hinted that it is tangled. I have dwelt at length on the inconveniences of putting up with it. It is time to think about taking steps.

Russell, in his theory of so-called singular descriptions, showed clearly how we might meaningfully use seeming names without supposing that the entities allegedly named be. The names to which Russell's theory directly applies are complex descriptive names such as 'the author of *Waverly*', 'the present King of France', 'the round square cupola on Berkeley College'. Russell analyzes such phrases systematically as fragments of the whole sentences in which they occur. The sentence 'The author of *Waverly* was a poet', e.g., is explained as a whole as meaning 'Someone (better: something) wrote *Waverly* and was a poet, and nothing else wrote *Waverly*'. (The point of this added clause is to affirm the uniqueness which is implicit in the word 'the', in 'the author of *Waverly*'). The sentence 'The round square cupola on Berkeley College is pink' is explained as 'Something is round and square and is a cupola on Berkeley College and is pink, and nothing else is round and square and a cupola on Berkeley College'.

The virtue of this analysis is that the seeming name, a descriptive phrase, is paraphrased *in context* as a so-called incomplete symbol. No unified expression is offered as an analysis

of the descriptive phrase, but the statement as a whole which was the context of that phrase still gets its full quota of meaning — whether true or false.

The unanalyzed statement 'The author of *Waverly* was a poet' contains a part, 'the author of *Waverly*', which is wrongly supposed by McX and Wyman to demand objective reference in order to be meaningful at all. But in Russell's translation, 'Something wrote *Waverly* and was a poet and nothing else wrote *Waverly*', the burden of objective reference which had been put upon the descriptive phrase is now taken over by words of the kind that logicians call bound variables, variables of quantification: namely, words like 'something', 'nothing', 'everything'. These words, far from purporting to be names specifically of the author of *Waverly*, do not purport to be names at all; they refer to entities generally, with a kind of studied ambiguity peculiar to themselves. These quantificational words or bound variables are of course a basic part of language, and their meaningfulness, at least in context, is not to be challenged. But their meaningfulness in no way presupposes there being either the author of *Waverly* or the round square cupola on Berkeley College or any other specifically preassigned objects.

Where descriptions are concerned, there is no longer any difficulty in affirming or denying being. 'There is the author of *Waverly*' is explained by Russell as meaning 'Someone (or, more strictly, something) wrote *Waverly* and nothing else wrote *Waverly*'. 'The author of *Waverly* is not' is explained, correspondingly, as the alternation 'Either each thing failed to write *Waverly* or two or more things wrote *Waverly*'. This alternation is false, but meaningful; and it contains no expression purporting to designate the author of *Waverly*. The statement 'The round square cupola on Berkeley College is not' is analyzed in similar fashion. So the old notion that statements of non-being defeat themselves goes by the board. When a statement of being or non-being is analyzed by Russell's theory of descriptions, it ceases to contain any expression which even purports to name the alleged entity whose being is in question, so that the meaningfulness of the statement no longer can be thought to presuppose that there be such an entity.

Now what of 'Pegasus'? This being a word rather than a descriptive phrase, Russell's argument does not immediately apply to it. However, it can easily be made to apply. We have only to rephrase 'Pegasus' as a description, in any way that seems adequately to single out our idea: say 'the winged horse that was captured by Bellerophon'. Substituting such a phrase for 'Pegasus', we can then proceed to analyze the statement 'Pegasus is', or 'Pegasus is not', precisely on the analogy of Russell's analysis of 'The author of *Waverly* is' and 'The author of *Waverly* is not'.

In order thus to subsume a one-word name or alleged name such as 'Pegasus' under Russell's theory of description, we must of course be able first to translate the word into a description. But this is no real restriction. If the notion of Pegasus had been so obscure or so basic a one that no pat translation into a descriptive phrase had offered itself along familiar lines, we could still have availed ourselves of the following artificial and trivial-seeming device: we could have appealed to the *ex hypothesi* unanalyzable, irreducible attribute of *being Pegasus*, adopting, for its expression, the verb 'is-Pegasus', or 'pegasizes'. The noun 'Pegasus' itself could then be treated as derivative, and identified after all with a description: 'the thing that is-Pegasus', 'the thing that pegasizes'.

If the importing of such a predicate as 'pegasizes' seems to commit us to recognizing that there is a corresponding attribute, pegasizing, in Plato's heaven or in the mind of men, well and good. Neither we nor Wyman nor McX have been contending, thus far, about the being or non-being of universals, but rather about that of Pegasus. If in terms of pegasizing we can interpret the noun 'Pegasus' as a description subject to Russell's theory of descriptions, then we have disposed of the old notion that Pegasus cannot be said not to be without presupposing that in some sense Pegasus is.

Our argument is now quite general. McX and Wyman supposed that we could not meaningfully affirm a statement of the form 'So-and-so is not', with a simple or descriptive singular noun in place of 'so-and-so', unless so-and-so be. This supposition is now seen to be quite generally groundless, since the singular noun in question can always be expanded into a

singular description, trivially or otherwise, and then analyzed out à la Russell.

We cannot conclude, however, that man is henceforth free of all ontological commitments. We commit ourselves outright to an ontology containing numbers when we say there are prime numbers between 1000 and 1010; we commit ourselves to an ontology containing centaurs when we say there are centaurs; and we commit ourselves to an ontology containing Pegasus when we say Pegasus is. But we do not commit ourselves to an ontology containing Pegasus or the author of *Waverly* or the round square cupola on Berkeley College when we say that Pegasus or the author of *Waverly* or the cupola in question is not. We need no longer labor under the delusion that the meaningfulness of a statement containing a singular term presupposes an entity named by the term. A singular term need not name to be significant.

An inkling of this might have dawned on Wyman and McX even without benefit of Russell if they had only noticed — as so few of us do — that there is a gulf between *meaning* and *naming* even in the case of a singular term which is genuinely a name of an object. Frege's example will serve: the phrase 'Evening Star' names a certain large physical object of spherical form, which is hurtling through space some scores of millions of miles from here. The phrase 'Morning Star' names the same thing, as was probably first established by some servant Babylonian. But the two phrases cannot be regarded as having the same meaning; otherwise that Babylonian could have dispensed with his observations and contented himself with reflecting on the meanings of his words. The meanings, then, being different from one another, must be other than the named object, which is one and the same in both cases.

Confusion of meaning with naming not only made McX think he could not meaningfully repudiate Pegasus; a continuing confusion of meaning with naming no doubt helped engender his absurd notion that Pegasus is an idea, a mental entity. The structure of his confusion is as follows. He confused the alleged *named object* Pegasus with the *meaning* of the word 'Pegasus', therefore concluding that Pegasus must be in order that the word have meaning. But what sorts of things are

meanings? This is a moot point; however, one might quite plausibly explain meanings as ideas in the mind, supposing we can make clear sense in turn of the idea of ideas in the mind. Therefore Pegasus, initially confused with a meaning, ends up as an idea in the mind. It is the more remarkable that Wyman, subject to the same initial motivation as McX, should have avoided this particular blunder and wound up with unactualized possibles instead.

Now let us turn to the ontological problem of universals: the question whether there are such entities as attributes, relations, classes, numbers, functions. McX, characteristically enough, thinks there are. Speaking of attributes, he says: "There are red houses, red roses, red sunsets; this much is prephilosophical common-sense in which we must all agree. These houses, roses, and sunsets, then, have something in common; and this which they have in common is all I mean by the attribute of redness." For McX, thus, there being attributes is even more obvious and trivial than the obvious and trivial fact of there being red houses, roses, and sunsets. This, I think, is characteristic of metaphysics, or at least of that part of metaphysics called ontology: one who regards a statement on this subject as true at all must regard it as trivially true. One's ontology is basic to the conceptual scheme by which he interprets all experiences, even the most commonplace ones. Judged within some particular conceptual scheme — and how else is judgment possible? — an ontological statement goes without saying, standing in need of no separate justification at all. Ontological statements follow immediately from all manner of casual statements of commonplace fact, just as — from the point of view, anyway, of McX's conceptual scheme — 'There is an attribute' follows from 'There are red houses, red roses, red sunsets.'

Judged in another conceptual scheme, an ontological statement which is axiomatic to McX's mind may, with equal immediacy and triviality, be adjudged false. One may admit that there are red houses, roses, and sunsets, but deny, except as a popular and misleading manner of speaking, that they have anything in common. The words 'houses', 'roses', and 'sunsets' denote each of sundry individual entities which are houses and

roses and sunsets, and the word 'red' or 'red object' denotes each of sundry individual entities which are red houses, red roses, red sunsets; but there is not, in addition, any entity whatever, individual or otherwise, which is named by the word 'redness', nor, for that matter, by the word 'househood', 'rosehood', 'sunsethood'. That the houses and roses and sunsets are all of them red may be taken as ultimate and irreducible, and it may be held that McX is no better off, in point of real explanatory power, for all the occult entities which he posits under such names as 'redness'.

One means by which McX might naturally have tried to impose his ontology of universals on us was already removed before we turned to the problem of universals. McX cannot argue that predicates such as 'red' or 'is-red', which we all concur in using, must be regarded as names each of a single universal entity in order that they be meaningful at all. For, we have seen that being a name of something is a much more special feature than being meaningful. He cannot even charge us — at least not by *that* argument — with having posited an attribute of pegasizing by our adoption of the predicate 'pegasizes'.

However, McX hits upon a different stratagem. "Let us grant," he says, "this distinction between meaning and naming of which you make so much. Let us even grant that 'is red', 'pegasizes', etc., are not names of attributes. Still, you admit they have meanings. But these *meanings*, whether they are *named* or not, are still universals, and I venture to say that some of them might even be the very things that I call attributes, or something to much the same purpose in the end."

For McX, this is an unusually penetrating speech; and the only way I know to counter it is by refusing to admit meanings. However, I feel no reluctance toward refusing to admit meanings, for I do not thereby deny that words and statements are meaningful. McX and I may agree to the letter in our classification of linguistic forms into the meaningful and the meaningless, even though McX construes meaningfulness as the *having* (in some sense of 'having') of some abstract entity which he calls a meaning, whereas I do not. I remain free to maintain that the fact that a given linguistic utterance is mean-

ingful (or *significant*, as I prefer to say so as not to invite hypostasis of meanings as entities) is an ultimate and irreducible matter of fact; or, I may undertake to analyze it in terms directly of what people do in the presence of the linguistic utterance in question and other utterances similar to it.

The useful ways in which people ordinarily talk or seem to talk about meanings boil down to two: the *having* of meanings, which is significance, and *sameness* of meaning, or *synonymy*. What is called *giving* the meaning of an utterance is simply the uttering of a synonym, couched, ordinarily, in clearer language than the original. If we are allergic to meanings as such, we can speak directly of utterances as significant or insignificant, and as synonymous or heteronymous one with another. The problem of explaining these adjectives 'significant' and 'synonymous' with some degree of clarity and rigor — preferably, as I see it, in terms of behavior — is as difficult as it is important. But the explanatory value of special and irreducible intermediary entities called meanings is surely illusory.

Up to now I have argued that we can use singular terms significantly in sentences without presupposing that there be the entities which those terms purport to name. I have argued further that we can use general terms, e.g., predicates, without conceding them to be names of abstract entities. I have argued further that we can view utterances as significant, and as synonymous or heteronymous with one another, without countenancing a realm of entities called meanings. At this point McX begins to wonder whether there is any limit at all to our ontological immunity. Does *nothing* we may say commit us to the assumption of universals or other entities which we may find unwelcome?

I have already suggested a negative answer to this question, in speaking of bound variables, or variables of quantification, in connection with Russell's theory of descriptions. We can very easily involve ourselves in ontological commitments, by saying, e.g., that *there is something* (bound variable) which red houses and sunsets have in common; or that *there is something* which is a prime number between 1000 and 1010. But this is, essentially, the *only* way we can involve ourselves in

ontological commitments : by our use of bound variables. The use of alleged names is no criterion, for we can repudiate their namehood at the drop of a hat unless the assumption of a corresponding entity can be spotted in the things we affirm in terms of bound variables. Names are in fact altogether immaterial to the ontological issue, for I have shown, in connection with 'Pegasus' and 'pegasize', that names can be converted to descriptions, and Russell has shown that descriptions can be eliminated. Whatever we say with help of names can be said in a language which shuns names altogether. To be is, purely and simply, to be the value of a variable. In terms of the categories of traditional grammar, this amounts roughly to saying that to be is to be in the range of reference of a pronoun. Pronouns are the basic media of reference; nouns might better have been named pro-pronouns. The variables of quantification, 'something', 'nothing', 'everything', range over our whole ontology, whatever it may be; and we are convicted of a particular ontological presupposition if, and only if, the alleged presuppositum has to be reckoned among the entities over which our variables range in order to render one of our affirmations true.

We may say, e.g., that some dogs are white, and not thereby commit ourselves to recognizing either doghood or whiteness as entities. 'Some dogs are white' says that some things that are dogs are white; and, in order that this statement be true, the things over which the bound variable 'something' ranges must include some white dogs, but need not include doghood or whiteness. On the other hand, when we say that some zoölogical species are cross-fertile, we are committing ourselves to recognizing as entities the several species themselves, abstract though they be. We remain so committed at least until we devise some way of so paraphrasing the statement as to show that the seeming reference to species on the part of our bound variable was an avoidable manner of speaking.

If I have been seeming to minimize the degree to which in our philosophical and unphilosophical discourse we involve ourselves in ontological commitments, let me then emphasize that classical mathematics, as the example of primes between 1000 and 1010 clearly illustrates, is up to its neck in commitments to an ontology of abstract entities. Thus it is that the

great mediaeval controversy over universals has flared up anew in the modern philosophy of mathematics. The issue is clearer now than of old, because we now have a more explicit standard whereby to decide what ontology a given theory or form of discourse is committed to: a theory is committed to those and only those entities to which the bound variables of the theory must be capable of referring in order that the affirmations made in the theory be true.

Because this standard of ontological presupposition did not emerge clearly in the philosophical tradition, the modern philosophical mathematicians have not on the whole recognized that they were debating the same old problem of universals in a newly clarified form. But the fundamental cleavages among modern points of view on foundations of mathematics do come down pretty explicitly to disagreements as to the range of entities to which the bound variables should be permitted to refer.

The three main mediaeval points of view regarding universals are designated by historians as *realism*, *conceptualism*, and *nominalism*. Essentially these same three doctrines reappear in twentieth-century surveys of the philosophy of mathematics under the new names *logicism*, *intuitionism*, and *formalism*.

Realism, as the word is used in connection with the mediaeval controversy over universals, is the Platonic doctrine that universals or abstract entities have being independently of the mind; the mind may discover them but cannot create them. *Logicism*, represented by such latter-day Platonists as Frege, Russell, Whitehead, Church, and Carnap, condones the use of bound variables to refer to abstract entities known and unknown, specifiable and unspecifiable, indiscriminately.

Conceptualism holds that there are universals but they are mind-made. *Intuitionism*, espoused in modern times in one form or another by Poincaré, Brouwer, Weyl, and others, countenances the use of bound variables to refer to abstract entities only when those entities are capable of being cooked up individually from ingredients specified in advance. As Fraenkel has put it, logicism holds that classes are discovered while intuitionism holds that they are invented — a fair statement indeed of the old opposition between realism and con-

ceptualism. This opposition is no mere quibble; it makes an essential difference in the amount of classical mathematics to which one is willing to subscribe. Logicians, or realists, are able on their assumptions to get Cantor's ascending orders of infinity; intuitionists are compelled to stop with the lowest order of infinity, and, as an indirect consequence, to abandon even some of the classical laws of real numbers. The modern controversy between logicism and intuitionism arose, in fact, from disagreements over infinity.

Formalism, associated with the name of Hilbert, echoes intuitionism in deplored the logicist's unbridled recourse to universals. But formalism also finds intuitionism unsatisfactory. This could happen for either of two opposite reasons. The formalist might, like the logicist, object to the crippling of classical mathematics; or he might, like the *nominalists* of old, object to admitting abstract entities at all, even in the restrained sense of mind-made entities. The upshot is the same: the formalist keeps classical mathematics as a play of insignificant notations. This play of notations can still be of utility — whatever utility it has already shown itself to have as a crutch for physicists and technologists. But utility need not imply significance, in any literal linguistic sense. Nor need the marked success of mathematicians in spinning out theorems, and in finding objective bases for agreement with one another's results, imply significance. For, an adequate basis for agreement among mathematicians can be found simply in the rules which govern the manipulation of the notations — these syntactical rules being, unlike the notations themselves, quite significant and intelligible. *

I have argued that the sort of ontology we adopt can be consequential — notably in connection with mathematics, although this is only an example. Now how are we to adjudicate among rival ontologies? Certainly the answer is not provided by the semantical formula "To be is to be the value of a variable"; this formula serves rather, conversely, in testing the conformity of a given remark or doctrine to a prior ontological

* See Goodman and Quine, "Steps toward a constructive nominalism," *Journal of Symbolic Logic*, vol. 12 (1947), pp. 97-122.

standard. We look to bound variables in connection with ontology not in order to know what there is, but in order to know what a given remark or doctrine, ours or someone else's, *says* there is; and this much is quite properly a problem involving language. But what there is is another question.

In debating over what there is, there are still reasons for operating on a semantical plane. One reason is to escape from the predicament noted at the beginning of the paper: the predicament of my not being able to admit that there are things which McX countenances and I do not. So long as I adhere to my ontology, as opposed to McX's, I cannot allow my bound variables to refer to entities which belong to McX's ontology and not to mine. I can, however, consistently describe our disagreement by characterizing the statements which McX affirms. Provided merely that my ontology countenances linguistic forms, or at least concrete inscriptions and utterances, I can talk about McX's sentences.

Another reason for withdrawing to a semantical plane is to find common ground on which to argue. Disagreement in ontology involves basic disagreement in conceptual schemes; yet McX and I, despite these basic disagreements, find that our conceptual schemes converge sufficiently in their intermediate and upper ramifications to enable us to communicate successfully on such topics as politics, weather, and, in particular, language. In so far as our basic controversy over ontology can be translated upward into a semantical controversy about words and what to do with them, the collapse of the controversy into question-begging may be delayed.

It is no wonder, then, that ontological controversy should tend into controversy over language. But we must not jump to the conclusion that what there is depends on words. Translatability of a question into semantical terms is no indication that the question is linguistic. To see Naples is to bear a name which, when prefixed to the words 'sees Naples', yields a true sentence; still there is nothing linguistic about seeing Naples.

Our acceptance of an ontology is, I think, similar in principle to our acceptance of a scientific theory, say a system of physics: we adopt, at least insofar as we are reasonable, the simplest conceptual scheme into which the disordered frag-

ments of raw experience can be fitted and arranged. Our ontology is determined once we have fixed upon the over-all conceptual scheme which is to accommodate science in the broadest sense; and the considerations which determine a reasonable construction of any part of that conceptual scheme, e.g. the biological or the physical part, are not different in kind from the considerations which determine a reasonable construction of the whole. To whatever extent the adoption of any system of scientific theory may be said to be a matter of language, the same — but no more — may be said of the adoption of an ontology.

But simplicity, as a guiding principle in constructing conceptual schemes, is not a clear and unambiguous idea; and it is quite capable of presenting a double or multiple standard. Imagine, e.g., that we have devised the most economical set of concepts adequate to the play-by-play reporting of immediate experience. The entities under this scheme — the values of bound variables — are, let us suppose, individual subjective events of sensation or reflection. We should still find, no doubt, that a physicalistic conceptual scheme, purporting to talk about external objects, offers great advantages in simplifying our over-all reports. By bringing together scattered sense events and treating them as perceptions of one object, we reduce the complexity of our stream of experience to a manageable conceptual simplicity. The rule of simplicity is indeed our guiding maxim in assigning sense data to objects : we associate an earlier and a later round sensum with the same so-called penny, or with two different so-called pennies, in obedience to the demands of maximum simplicity in our total world-picture.

Here we have two competing conceptual schemes, a phenomenalist one and a physicalistic one. Which should prevail ? Each has its advantages; each has its special simplicity in its own way. Each, I suggest, deserves to be developed. Each may be said, indeed, to be the more fundamental, though in different senses : the one is epistemologically, the other physically, fundamental.

The physical conceptual scheme simplifies our account of experience because of the way myriad scattered sense events come to be associated with single so-called objects; still there

is no likelihood that each sentence about physical objects can actually be translated, however deviously and complexly, into the phenomenalist language. Physical objects are postulated entities which round out and simplify our account of the flux of experience, just as the introduction of irrational numbers simplifies laws of arithmetic. From the point of view of the conceptual scheme of the elementary arithmetic of rational numbers alone, the broader arithmetic of rational and irrational numbers would have the status of a convenient myth, simpler than the literal truth (namely the arithmetic of rationals) and yet containing that literal truth as a scattered part. Similarly, from a phenomenalist point of view, the conceptual scheme of physical objects is a convenient myth, simpler than the literal truth and yet containing that literal truth as a scattered part.

Now what of classes or attributes of physical objects, in turn? A platonistic ontology of this sort is, from the point of view of a strictly physicalistic conceptual scheme, as much of a myth as that physicalistic conceptual scheme itself was for phenomenism. This higher myth is a good and useful one, in turn, in so far as it simplifies our account of physics. Since mathematics is an integral part of this higher myth, the utility of this myth for physical science is evident enough. In speaking of it nevertheless as a myth, I echo that philosophy of mathematics to which I alluded earlier under the name of formalism. But my present suggestion is that an attitude of formalism may with equal justice be adopted toward the physical conceptual scheme, in turn, by the pure aesthete or phenomenalist.

The analogy between the myth of mathematics and the myth of physics is, in some additional and perhaps fortuitous ways, strikingly close. Consider, for example, the crisis which was precipitated in the foundations of mathematics, at the turn of the century, by the discovery of Russell's paradox and other antinomies of set theory. These contradictions had to be obviated by unintuitive, *ad hoc* devices; our mathematical myth-making became deliberate and evident to all. But what of physics? An antinomy arose between the undular and the corpuscular accounts of light; and if this was not as out-and-out a contradiction as Russell's paradox, I suspect that the reason is merely that physics is not as out-and-out as mathematics.

Again, the second great modern crisis in the foundations of mathematics — precipitated in 1931 by Gödel's proof that there are bound to be undecidable statements in arithmetic — has its companion-piece in physics in Heisenberg's indeterminacy principle.

In earlier pages I undertook to show that some common arguments in favor of certain ontologies are fallacious. Further, I advanced an explicit standard whereby to decide what the ontological commitments of a theory are. But the question what ontology actually to adopt still stands open, and the obvious counsel is tolerance and an experimental spirit. Let us by all means see how much of the physicalistic conceptual scheme can be reduced to a phenomenalist one; still physics also naturally demands pursuing, irreducible *in toto* though it be. Let us see how, or to what degree, natural science may be rendered independent of platonistic mathematics; but let us also pursue mathematics and delve into its platonistic foundations.

From among the various conceptual schemes best suited to these various pursuits, one — the phenomenalist — claims epistemological priority. Viewed from within the phenomenalist conceptual scheme, the ontologies of physical objects and mathematical objects are myths. The quality of myth, however, is relative: relative, in this case, to the epistemological point of view. This point of view is one among various, corresponding to one among our various interests and purposes.

WILLARD V. QUINE

Harvard University

TIME AND ETERNITY

Nobody will deny that there is time. We are engulfed in the stream of time. Our whole being is time. Our present day philosophers are so preoccupied with the phenomenon of time that they consider time even to be the very essence of being, the basic character of Reality itself. Thus, nobody doubts the existence of time.

But, is there Eternity? It sounds so grandiose, when the poet says : "Eternity, thou pleasing, dreadful thought." (Addison, *Caro V*) The word, 'eternity' speaks, one might say, as with trumpet blasts and opens before us vistas of infinite spaces that may frighten us. It carries a solemnity with it which elevates us to a higher plane of existence. But we have become so suspicious of any such state of exultation, of any big word, that we wonder, whether 'eternity' is not merely an empty phrase. We understand Time, but we do not understand Eternity. "The clock indicates a moment, but what does Eternity indicate?" Is there eternity at all? Yest, there is, for Time itself is eternal. Time is endless and has no beginning or end. Time cannot stop and, if it stopped, it would stop only at what no longer is Time, but Eternity. Thus, we cannot avoid thinking of some kind of eternity whenever we think of time at all, yes, whenever we think at all of what is true. For what is true is true at any time. Our object may be ever so transitory, may last only a fraction of a second, as for instance, a mesotron does, but that it is so, is true at any time. Our thinking itself is a temporal process, but, if it is true, its truth is true in eternity.

Of course, from the timelessness of Truth, it does not necessarily follow that some eternal existence must correspond to it, as Plato thought; for our idea may be an abstraction which as such exists nowhere in the world. We would fall prey to the "fallacy of misplaced concreteness", were we to assume that things exist in the same way in which we think of them *in abstracto*. We may distinguish, for instance, rational and irrational forces in our soul, as Plato or Freud have done, but this does not mean that there exists in man any irrational power,

which is not at the same time rational, and vice-versa. We cannot separate the rational from the irrational consciousness in our soul, as if they were separated, so to speak, in space. And even less must we think of Time and Eternity as of entirely different spheres. Time may itself be some kind of eternity and eternity some kind of time.

If we speak, for instance, of God as eternal, we do not by eternity merely mean the *endlessness of Time*, nor the *timelessness of Truth*, but the *timelessness of an Existence* and, what is more, of a *dynamic Existence*. It is only due to the influence or rather to the misunderstanding of Greek philosophers, such as Plato, that today, people think so often of eternity as if it were some static, unmoved entity, entirely cut off from time and from life. Such an idea is merely an artificial abstraction, entirely foreign to any religious thought, even to Plato himself. The Greek word, "aeon", which in English is generally translated by "Eternity", means originally Life and Lifetime and therefore something very dynamic. And similarly the Hebrew word which is rendered in the Old Testament by "Eternity" denotes Life, Power, and Triumph. "Aeon", as Aristotle defines it, "is a Total which embraces the time of the life of each individual. In the same sense, then also the Total of the whole universe (that is the Total which embraces all time of the universe even to infinity) is called aeon. From it, then, the other things derive their being and life". The Greeks were so fortunate as to have two different words for two different aspects of time, which we confuse in the one word, Time. They distinguished the lifetime (as "aeon") from the abstract, measurable clock-time, which they called "chronos". And in addition to this they had even a third concept of time, namely, "kairos", the right moment, the critical time (opportunity, season, measure) which was, so to speak, the synthesis of "aeon" and "chronos". An eternal being without any power and energy is a barren abstraction which certainly does not exist anywhere. Even Plato defines his eternal being as a "dynamic power" and asks: "Can we imagine this absolute being as devoid of life and process and as unmoved in awful solemnity?" (*Sophist* 249).

But now we have to ask again: is there even such eternity at all? Or is there only time (*chronos*) as we observe and measure it by numbers? But this measurable time is certainly nothing absolute as perhaps Newton thought it to be; rather is it something merely relative and secondary or as the modern physicists say, it is "like space, dependent on the presence of ponderable matter". This present matter or energy would then be primary and prior to time.

Thus, the relationship between time and eternity becomes reversed compared to what it seemed to be in the beginning. Time is no longer something absolute but depends on something else, on some dynamic process, which in the Greek sense of the word "*aeon*" may be called eternal and which can never be entirely exhausted by our time measurement.

But what is time as we experience and measure it? Sense-experience seems to form a series, a time-series, indicated by "earlier" and "later", a one-dimensional continuum. It appears to be an infinite succession of past, present and future. Its nature then consists in that it passes; as soon as it turns from future into a present, it has already turned again and has become a past. But the past is no more and the future is not yet. Only what is present to my senses — '*now*' — seems really to exist. What one experiences is the moment '*now*' or the present. But what is this present moment? This "*now*"? Is it this year, this day, this second? At the very moment when I try to grasp this present, it has already become the past and does not exist. The perceivable time has no real present; for the present "*now*" is merely an elusive point, not time but merely the limit of time, a transitory border-line between past and future. At the moment when I try to point out this "*now*", it does no longer exist, or rather it then exists only in my pointing it out, while the actual object has passed away. It is similar with (Euclidean) space. For in our spatial intuition there is nothing that could justify either the Euclidean concept of a mathematical point or of a line as "a continuous point-set".

But, if I call present what is not merely simultaneous with me but what is present to me, what is *the presence of myself*? Must not I myself be also present to some real presence? And

can this presence be anything else but eternal, if there should be any present at all?

However this may be, what a strange phenomenon is the observable time itself. It seems to be an existence which exists in non-existence. And yet, I can measure that time and can compare times in distinguishing long and short times. Where then is that time which I measure and compare if the future is not yet and the past is no more and even the present cannot be grasped? Now, you may say: the past has still some kind of presence in my memory, in my faculty to retain and recall that which once was present to my senses, just as even the future is present in my precognition, in my planning and designing. If one calls that faculty of our mind to represent objects without their presence "imagination", then it is evidently this faculty which enables us to observe time as a whole and to measure it (cf. W. James, *Principles of Psychology*, 1890 I, p. 630).¹

But, however important such an analysis of our subjective time experience may be, it explains merely how we may become aware of time, not what it really is. Our awareness of time itself is a temporal process and already presupposes time. We generally attribute to the "subjective" time a "time" of "objective" events whose order in time claims validity for all subjects. We would hardly possess the faculty of memory and precognition if past and future had not some analogous objective presence in nature. We know that the sun of today is the same as it was last year and as it was in the time of Homer. The vestiges of the past are visible life scars in the universe today. The atoms of uranium and thorium, which we find in the crust of our earth today, are the same as those which formed it about two billions years ago. This world carries its past with it in the same way as any human being does. The only difference is that the human being can remember it. We think, nature does not. Yes, although we can remember our

¹ Cf. Einstein's formulation: "Experience-series can repeat themselves and can then be recognized; they can also be repeated inexactly wherein some events are replaced by others, without the character of repetition becoming lost for us. In this way we form the time concept as a one-dimensional frame which can be filled by experiences in various ways."

childhood, we cannot remember our *birth*. Our birth can be observed by others, but never by ourselves. Nobody can experience his own first beginning. If we think of this event, we think of it as it was observed by others, or by ourselves as if it happened to someone else. St. Augustine was perhaps the first thinker who saw the problem which is implied in this puzzling fact and expressed it in simple words² : "What I want to say is that I do not know whence I came hither, into this life. I heard about my first beginnings from the parents of my flesh out of which I was formed in time, for I myself don't remember it. The comfort then of a woman's milk did receive me... Afterwards, I began also to smile. That is at least what they told me of me and I believe it, because I see other infants doing it also. For myself I don't remember it; and thus, little by little, I became conscious where I was and tried to express my wishes to those who could satisfy them, when *I* could not. That this is the way of infants, I learned from those *I* could observe. They taught me that this was also my way. And now my infancy died long ago, and I live. But did not my first infancy succeed another age of mind that died before it? Was this age that which I spent in my mother's womb? For of that I have heard somewhat and I have myself seen women with child. And what was before that life again? Was I anywhere or anybody? For this, I have no one to tell me, neither father nor mother, nor the experience of others nor my own memory. Or do you laugh at me for asking such questions?"

Here we have a clear presentation of a crucial problem of time. Nobody is able to experience the first beginning of his own existence. It recedes, no matter how hard he tries to approach it. In the last analysis it cannot be observed even by others. And yet nobody doubts that he came into existence at some moment and did not exist before. The biologist may observe how in infinite time, out of certain matter an organic cell was formed and multiplied in accordance with certain physical, chemical or biological laws. This cell will then last awhile and finally perish. These are observable facts and thus some one may say, "And this cell then is *I*". But this cell is only what was observable of himself to others. It is not his "*I*" itself. At that moment the actual "*I*" was in the biologist who

observed the cell, not in the cell. Here we get a glimpse of eternity as the limit of measurable time. Here we understand that by eternity we mean the time of existence as it is in and for itself and not as it is for others. The absolute first beginning and ultimate end of any existence is incommensurable with the continuous stream of observable time.

But if nobody can experience his own beginning in time, nobody can perceive his ultimate end either. We can experience our last moments, pain and agony, also the situation of seemingly inevitable death but not death itself, that moment when, as it is said, time borders on eternity. Our death as an event in time is observable only to others. As such it is an every-day experience; its physical and biological nature can be studied. There is nothing supernatural in it. We have inherited a certain lifetime with our genes and thus our life process will have its natural end. Others can then observe even the decay of the corpse. Thus our death is an event in time, observable to others but not to ourselves. To us observable time ends with it. It is over for *all* time. Nobody will be content with a merely biological explanation of death when he sees a beloved friend die. Where is then that Self gone, that consciousness which to itself was the center of the whole world? If one says: into the realm of eternity, then by eternity is meant again the *true* time, the time of one's own existence, "aeon".

And indeed, although we know that every one must die, that it is simply a natural necessity, no one really believes in his own death. I take it on the authority of Freud who says, "No one believes in his own death; or to put the same thing in another way, in the depths of his unconsciousness, every one of us is convinced of his own immortality." And this is quite logical. For logic and experience tells us only that others must die, or as Young put it in his "Night Thoughts": "All men think all men mortals but themselves". One may remember the death of Ivan Ilyitch as it is told by Tolstoi from whom I quote the following passage: "In the depths of his soul he knew he was going to die, but he could not comprehend it. The form of syllogism which he had studied in Kiezewetter's logic, 'Cajus is a man. Men are mortal. Therefore Cajus is mortal.' had seemed to him all his life true only in its application to Cajus.

but never to himself. It was Cajus as *man*, as *man in general*, and in this respect it was perfectly correct. — But he was not Cajus and not man in general; he had always been an entity absolutely distinct from all others. He had been Vanja with Mama and Papa, then with Katinka... Was it Cajus who had been so deeply in love? Cajus is certainly mortal and it is proper that he should die. — But for me — that is another thing, and it cannot be that I must take my turn and die. If I were to die, like Cajus, then surely I should have known it. Some internal voice would have told me, but nothing of the sort happened to me. — In this way he endeavored to put away this thought of death as false, unjust, unwholesome. He summoned in place of this thought other thoughts, he strove to return to his former course of reasoning which of old used to hide from him the thought of death, but strangely enough, all that which formerly had destroyed the image of death was now incapable of producing that effect."

This is certainly a faithful psychological analysis of man's general attitude towards death and his frantic effort to hide this fact from himself in every day life. He tries to look at his own death as if it were that of another person, and in our time he has become so successful in this attempt, that "men of our generation even in the last hours of life are no longer troubled by any concern with immortality" (W. Osler). What is then the true reason of this their self-detached objectivity? Is it not because they unconsciously and tacitly presuppose the ever-presence of their observing self which looks even at its own death as if it were to happen to someone else? And yet death means just the very end of that self and consciousness. With the end of this consciousness, the whole truth of that usual aspect of life is threatened. Only if we face the possibility of such an absolute end of our own self does the true meaning of the question of immortality come into our horizon at all. Where are we going? It is as if we knocked at the door of Eternity. At such a moment we seem to have a kind of negative experience of eternity as of something which we can never experience. Then we know of our death as the border-line situation of our existence by which it is determined and beyond which another order of being, eternity, may begin, an order different

from that of observable time. We cannot think of eternity in terms of observable time as if our self were going on in this world and could remain an observable object in this world. The origin of all irrational superstition is the assumption that our self could live on after death in this temporal world so that it could be observed even as a ghost. And if we analyse the various rational arguments for the immortality of the soul, we shall find that they are all based on a similar fallacy of misplaced objectivity. And yet we cannot think of eternity in terms other than those which apply to things that can be seen in time. All our temporal ideas about eternity can therefore be considered merely as *analogies* for something that cannot be grasped in its own terms by us. The same difficulty, however, arises whenever we try to tackle the problem of a first beginning or an ultimate end in time. The end of things and their beginning are hopelessly hidden from us. In the continuous flux of time there cannot be absolute origination, for everything in it has grown out of that which preceded it and will pass into that which succeeds it.

And the same is true of the problem of an ultimate origination of the whole world. We ask: Has the universe a first beginning in time, or has the world always existed? Modern man revolts against any suggestion that the world may have been created. He has been brought up in the belief that this universe is infinite and has no limit in space and time. Thus he thinks that the world has always existed and will go on forever. Since Giordano Bruno, this belief in the infinity of the world in time has been the foundation of our traditional understanding of the universe. Science has taught us that we are able to find a sufficient cause for every phenomenon in another phenomenon of the same kind in *this* world, so that there seems to be no end in the chain of causes by which the present status of the world is determined. The assumption of an absolute origination of the world or of anything within the world seems to be irreconcilable with the fundamental law of physics, the principle of the conservation of matter or energy which tells us that the total amount of energy in the world is invariable and that energy cannot be created or destroyed, but only transformed into dif-

ferent manifestations. Nothing comes out of nothing and nothing can turn into nothing. With this insight the Greek philosophers founded our rational idea of nature as an intelligible order within which nothing can be considered as the effect of a foreign cause. The mere possibility of such a supernatural cause would disrupt the unity of nature and destroy the very foundation of science. Matter, the generating substance alone or energy, can be considered as eternal in science. Of course, the scientist is well aware of the hypothetical character of his constructs by which he tries to solve the jig-saw puzzle of his observations. He knows only too well that he does not yet know and hardly will ever know all the causes of nature. But the common man is convinced that these causes exist and will be discovered in time by science. Or he may think as Laplace did in the 18th century who said : "If a spirit, who at a given moment knew all the forces existing in nature and the relative position of all existing things or atoms which compose them, — if this omniscient spirit were able to submit all these data of observation to mathematical analysis, he would be able to comprehend in his formula the motion of the greatest heavenly body as well as that of the lightest atom." Nothing would be hidden to him; he would see that everything in nature is entirely determined by necessary natural laws. Laplace could indeed say of God, what the modern positivists say likewise, "I do not need this hypothesis."

But is it not a strange paradox that Laplace, in order to prove that he did not need God, had to imagine an omniscient spirit, that is, some kind of god ? Still stranger is it that even today people in general are still haunted by such a deterministic view of nature, although modern physicists repudiated this view long ago. The old-fashioned formulation of the law of causality was, "If we know the *present*, we can calculate the *future*", but the scientist knows today that this is impossible, although it is not so much the conclusion as the premise that is false : for we can never know the present completely and in full detail. (E. Schrödinger). We can no longer hope to describe the path of the smallest particles in terms of classical mechanics.

And what is more, according to modern physics, the space of this world is not infinite but curved and closed in itself. The universe is finite. Its present dimensions are estimated to be

about ten sixtillion miles, which is much only in comparison with our human measurements. We know today that this universe has not always existed, but was formed some two or three billion years ago and will pass out of existence some thirty-three billion years from now. Then, you may ask, has it not been proved by science that the world was created and that therefore God exists? For what can we imagine as being beyond the limits of this, our world-space and as being before or after the existence of *this* world except some eternal being, God?

But this would be an overhasty conclusion. It is true the whole intellectual climate of science has changed considerably during the last decades. Many of the intellectual and psychological obstacles which the scientific dogmas of the nineteenth century threw in the way of the religious ideas of creation and of God no longer exist. But the fundamental principle of modern science is: "never to speak about things which we cannot know through experience". For the modern physicist, only the so-called observables have any significance and meaning. The space of the world may be curved and finite, but this means that since we live in this space we can move only in accordance with its curvature and shall therefore never be able to get beyond its limits and to get a glimpse of whatever there may be. The scientist will decline to leap from this observable world into the realm of the unknown. Nothing certain is known of what the properties of the space-time-continuum may be as a whole. And if we ask the scientist what was there before the beginning of this world and what will there be after its end he will probably answer if he answers at all: There evidently were those waves of ever-present energy into which this world and its elements will also be dissolved at the end, at the maximum state of entropy, and after the end these energy waves may form again a new universe again in accordance with the never changing course of nature. For, according to the general theory of relativity the space-like continuum may be infinite in time although finite in space. Thus the empiricist is not at all forced by reason to accept the idea of creation. He can escape it by the same device that the Greek philosophers used, namely, by the assumption of some cyclic course of nature.

Now this escape does not sound very convincing. Of course, for the scientist only observable phenomena can have any meaning and if there had been an observer at the moment when this world came into existence, he might have observed such waves of energy or some other matter. The only trouble is that the condition of this "if" can never be fulfilled in reality, as everybody knows. The first beginning and ultimate end of the world are not objects of possible experience at all. At the moment when this world is supposed to have been formed there was no one yet who could perceive it. And when it passes out of existence there will be no one left to observe it.

However desperately the positivist may protest that the scientist deals only with so-called observables and that in the formulas of science nothing is said about any observer, it remains a safe guess that where there is anything observable, there must be also an observer. The fact that those formulas do not say anything about an observer does prove rather than refute the unconscious presupposition of such an observer, however idealized and free of all human limitations he may be. And what is more, the observation of all those atoms, electrons or other particles presupposes not only the existence of a scientist who can observe them but also the existence of all his refined instruments (Geiger Counter, Wilson chamber, etc.) and of his whole intellectual equipment without which not a single one of his discoveries would have been made. In this way, the real *conditio sine qua non* of all those actual observations is not only the existence of some human individual but also the whole history of the human race and particularly of our western civilization. The *actual* observation is the ultimate fact, the concrete reality of which the observable atom is merely an abstract part.

Thus, the existence of a real Self, and with it of this whole world of which it is merely a part, is presupposed whenever we think of the first formation of this universe out of infinite matter. Furthermore, we must never forget that if the world is merely a natural process, those atoms and their motion must have had in themselves from the very beginning the potential power to form eventually such a wonderful being as man and especial-

ly the modern scientist with his Self able to discover them; for the atoms cannot discover themselves. In the last analysis the question of an ultimate origination of this world is therefore really the question of the origination of our own Self. We may think of the formation and development of the physical universe out of previous matter as a merely natural process in observable time, but in this way we can never understand the origination of our own or of any other Self whose existence is always anticipated in our idea of that process as an observable one. While our own birth and death are events in time which can be observed at least by others the first beginning of the world could not be observed by any one at all, nor even by the world itself were it endowed with some power of perception. It is an absolute moment in which eternity touches time.

However, the idea of creation has always been considered as a mystery of faith which cannot be proved by reason or science even though it cannot be disproved by reason either. — "Through faith we understand that the worlds (Aeons) were framed by the word of God so that things which are seen were *not* made of things which do appear" (Hebrews XI, 3). — And yet the idea of creation seems to be the only rational way in which we can account for the existence of the world as it really is, and especially for the existence of a Self which is capable of understanding it and of attaining truth and freedom. For to create means to put *free* beings before and opposite to one-self, to infuse one's own very being into another being which thereby gains an individual existence of its own, an existence which is independent of its creator and may become creative in its turn. In a similar way we like to imagine the creation by a genius whose products gain a life and destiny of their own.

Although modern man does doubt a creative power in God he certainly does not doubt the possibility of such a creative power in *himself*. And how could he doubt the possibility of a free will and of the power of self-determination in himself if without it his own thinking would be without any truth and meaning? And yet, the possibility of such a free, creative will presents exactly the same intellectual difficulty as the possibility of the creation of the world as a whole. For by free will or thought we mean the power to take the initiative, i.e., to

begin a new series of causes. Of course, in observable time there will always be prior events by which that first beginning can be explained. But in spite of all these objections nobody denies the possibility of such creative moments in the life of the individual as well as in that of the race. For whenever a new truth is discovered, a new vision of beauty is embodied or a free, moral act is performed something entirely new comes into the world which did not exist before. As seen by another, by the historian or the psychologist, this seemingly first beginning will, of course, appear merely as one phase in a continuous development and as determined by what precedes it. Under this aspect true creativity is impossible in Nature. Even if the scientist does not deny the possibility of novelty and of some new emergence in Nature such a creative evolution can be understood only as an unfolding of potentialities which had existed in nature before. Nature is always repeating its past in accordance with its unchanging laws. But in our own will we find the power to tear ourselves away from this ever-repeated process of nature in which we are engulfed. As long as we have not had this experience, days, months, years are always repeating themselves in monotonous succession. And nothing new really happens. There is no real present in such a life, no fixed moment which could differentiate past and future. In this way we are merely vegetating and live the life of a ghost, of a "revenant" who is doomed forever to repeat his past. But in an act of creative freedom we break the spell, we tear ourselves away from the cycle of an ever — recurring past and step into a new present which is pregnant of future. Not until such a creative moment do we become a real Self, a free personality. The merely *negative* liberation from our bondage to Nature without the creation of a new kind of existence would be a step into a void. But in a truly creative moment, our former existence becomes irrevocably past and a new form of life begins in time.

In any such creative moment a new true content enters the empty lapse of time. And the history of the individual or the race is the succession of such unique moments when a new present, a new truth comes into existence and makes what was before irrevocably past. Such a moment may last only an instant;

still, it is an eternal present which brings, so to speak, the continuous flux of time to a *standstill*. At such a moment something eternal seems to invade time. Such a moment is incommensurable with observable time. 'It is not properly an atom of time but rather an atom of eternity'. We can never say at what exact instant in time such a creative event came into existence. To the observer, there cannot be an absolutely first beginning or an ultimate end of such a creative moment in the continuous development of the historical process. He will always be able to find precedent forces which explain somewhat what happened in a natural way and it is his duty to do so. The true origin of any such creative event is veiled in darkness and can never be accurately determined in our clock-time. It must have originated before it becomes visible to our eyes. It is a "new Creation".

However this may be, nobody will doubt that such creative moments are possible in our life, moments in which a new eternal truth comes into the world and "all things become new", in which thus eternity enters time. We know that such a moment alone can give real meaning and significance to our life and to that of our race and we hope for it: true eternity is not something that begins only after our death. It is always present. It is going on all the time. It is *here*. We are in it *now*. For there is no true time if there is no present; only eternity is a real present. In the last analysis, *true* time and eternity are both one and the same.

ERICH FRANK

University of Pennsylvania

² I am indebted to P. Merlan (*Philosophy and Phenomenological Research*, 1947) for his interpretation of this passage in St. Augustine's *Confessions*, Book I.

THE NATURE OF CAUSATION

Part I

Presuppositions of the Theory of Causation

Different accounts of causation can be understood in terms of the affirmation or denial of five propositions. Four are required to establish the causal nature of the Universe. By the addition of a fifth, complete determinism in the traditional sense follows. But if this fifth be denied, as I think it must be, an account of causation must be built on the framework of the first four propositions, and an alternative to the fifth.

Proposition I — Every event has determinate characters in terms of which it can be described; it is thus the substantial correlate of at least one proposition having the form "This is an X."

The import of this proposition is that whatever exists can be characterized. So far as a being cannot be characterized, it is isolate, a universe to itself, being incapable of relational existence in a Universe. But, as we have had occasion to show in an earlier paper¹, drawing on the *Parmenides* of Plato, the assertion that a universe is uncharacterizable is self-contradictory. For to hold that it is uncharacterizable is already to characterize it.

Proposition II — Each event B has a temporal predecessor A and a temporal successor C.

This proposition involves a number of doctrines, including the following :

1. There are events.
2. Every event is temporally ordered with respect to other events.
3. Time cannot have either a beginning or an end.

In the literature of Western philosophy, each has been denied by different groups.

¹ "The Method of Ambiguity," *New Scholasticism*, XXI (1947), pp. 154-91.

Augustine denies the third. According to him,² Time is a creation of God, just as are all other creatures. Although God precedes and succeeds Time, this precession and succession are not temporal, for Time is a created thing. The question, therefore, which asks what God did in the Time before he created the world is a false question since there was no time before God created it³. For God, everything is eternally present, since He is, to use the Scholastic phrasing, fully actual. But although Time is a creature, and in a sense lacks the reality pertaining to God's eternal present, yet nevertheless, "Who is there who can say to me that there are not three times (as we learned when boys, and as we have taught boys), the past, present, and future, but only present, because these two are not?... There are things both future and past."⁴

To take issue with Augustine here is to take issue with his entire view of the relation of God to the World, a view which, I think, makes that relation ultimately unintelligible. For to require that God make anything in the Universe what it is, Time included, is to demand also that God be unfinished in himself and thus related to and dependent upon the World. Yet this is precisely what Augustine denies.

Where Augustine denies the third doctrine, Bradley and others in the Idealistic tradition deny the first. The very notion, they hold, of an event is riddled with contradiction.

The principle of Bradley's analysis is that if events are not in some sense units, they are not events; but if they are units, they cannot be related to other units. External relations do not relate, and internal relations leave nothing to be related. In either case there are no events.⁵ The answer to Bradley must rest in an analysis⁶ that will show how things can be just what they are and yet be internally related to all other things.

As opposed to Bradley, who denies the first doctrine, Hume denies the second, while insisting on the first. There are events, says Hume. Events are the brute, raw data which

² See the brilliant XIth chapter of his *Confessions*.

³ *Confessions*, XI, XII-XIII.

⁴ *Ibid.*

⁵ *Appearance and Reality*, p. 39-43.

⁶ For which see below, p. 73 ff.

are the only material of our knowledge. Every impression is what it is, self-enclosed, and isolate, having within itself no ground for anything outside itself. These events, which Hume calls impressions and ideas, are known by a kind of epistemological intuition of common sense. It is evident upon reflection, Hume argues, that all we know consists of impressions and ideas, the latter being but faint copies of impressions. "By the term *impression*, then, I mean [Hume writes] all our more lively perceptions, when we hear, or see, or love, or hate, or desire, or will. And impressions are distinguished from ideas, which are the less lively perceptions, of which we are conscious, when we reflect on any of those sensations or movements above mentioned."⁷

Granted the adequacy of his epistemology, Hume's further arguments are unimpeachable. If the events, the atomic perceptions which are impressions and ideas, are isolate and distinct, they have no ground within themselves for the relations in which they are caught. Temporality is external to the events, and being external does not necessarily characterize them. It therefore may be true that events are ordered temporally, but in no sense can it be necessarily true. For it is not necessary to an atom that it be related; it is therefore not necessary that it be temporally related. The implication of this doctrine for causality is at once evident, and Hume made sure that it was understood. If it is not necessary that any event *C* follow an event *B*, it is certainly not necessary that an event *C* having the characters (a,b,c...) follow *B*. If I do not know for certain that anything will happen when I hit you, I obviously do not know that you will fall down.

Kant was the first philosopher of consequence to understand the full import of Hume's analysis. Deeply disturbed, he undertook to find a way of getting around it. That he failed to do the job adequately is perhaps to be attributed to his honesty as a convinced mathematical physicist.⁸

⁷ *An Enquiry Concerning The Human Understanding*, ed. L. A. Selby-Bigge, Oxford : Clarendon Press, 1902, pp. 17-22.

⁸ Cf. F. S. C. Northrop, "Natural Science and the Critical Philosophy of Kant," in *The Heritage of Kant*, ed. G. T. Whitney and D. F. Bowers, Princeton : Princeton University Press, 1939, pp. 53ff.

Adhering as he did to the Newtonian science which called for an absolute (i.e. external) space and time, and recognising that if time and space were external to events Hume was right in denying the necessary temporality and continuity of events, Kant sought a reconciliatory principle. The dilemma which he faced can be thus expressed :

A. It is true that bodies move in a container space and time in accordance with the Newtonian physics.

B. It is true that an isolate entity implies nothing outside itself, and therefore that the Newtonian physics is false so far as it pretends to be an account of synthetic necessary truth.

The principle Kant found was one of the most ingenious in the history of philosophy. If events were external to time, and yet must have an ingredient temporality, they must both be grounded in something else. This something else is the formal structure of the knowing mind.⁹

By making temporality a necessary formal condition of all perceptions Kant insured the temporal continuity of events; for all phenomenal events being mind-infected and dependent must conform to the mind's way of perceiving, just as the most brilliant hues must conform to the black and white of an ordinary camera when "perceived" by that camera. In this way it could be granted that the Newtonian atoms, while implying nothing about each other directly, nevertheless were necessarily related as phenomena, being all subject to the constant spatio-temporal form of the mind's perception. *B* is always preceded by *A* and followed by *C* because *A*, *B*, and *C*, are all mind-formed events, and therefore elements of a temporal series.¹⁰

Kant's treatment of the difficulty of which Hume had made so much is a desperate solution of an unnecessary dilemma.

⁹ Cf. the Conclusion to Section II of the "Transcendental Aesthetic" in the *Critique of Pure Reason*, ed. and translated by Norman Kemp Smith, London : MacMillan and Co., 1929, p. 77, where Kant writes : "Time is nothing but the form of inner sense, that is, of the intuition of ourselves and of our inner state. It cannot be the determination of outer appearance . . ."

¹⁰ Cf. *Ibid.*, p. 94.

ma. Though perhaps a *tour de force* unparalleled in the history of philosophy, possible only to an honest mind at once deeply sensitive to the contradictory implications of the best physics and philosophy of his day and determined to use speculative insight to resolve them, it is nevertheless an unsatisfactory accomplishment. This conclusion is admittedly much easier to insist upon in the light of the solid accomplishments of contemporary physics grounded in a non-Newtonian account of the relation of Time to things.¹¹ But despite the confidence that is to be gained from considerations of physics, it is on epistemological grounds alone that we can dispose of the dilemma. Once deny that atomism in the radical sense of Parmenides and Democritus and Hume is tenable, and the dilemma vanishes. Kant saw that atomism was in its own terms without warrant,¹² but thinking that it must be true, tried to avoid the contradictions. But there is no reason to insist on the truth of atomism; for even in Kant's case, the difficulty is really only pushed back a step further.

For Kant the isolate perceptions have their order and unity because of the mind's formative activity. But the knowledge that this is the case, as Kant himself shows, makes use, not of isolate perceptions, but of conceptions referring beyond themselves to many perceptions.¹³ But if this is the case there must be a ground for the relation of the perceptions to the conceptions, a ground insuring the non-isolate character of the perceptions. This ground must be internal to the phenomena, which therefore cannot be atoms in the strict sense.

The difficulty that Kant struggled with can be met by a wholesale application of his transcendental method. Instead of asking how we can deduce continuity from discontinuity, we must ask what is involved in the assertion of discontinuity, an

¹¹ Cf. C. C. Hartshorne, *Beyond Humanism*, pp. 143-9. Cf. also A. S. Eddington, *Science and the Unseen World*, London: George Allen and Unwin, 1930. Robert A. Millikan, *Evolution in Science and Religion*, New Haven: Yale University Press, 1927.

¹² Cf. the section of "Phenomena and Noumena" *op. cit.*, pp. 257-75.

¹³ "Now all experience does indeed contain, in addition to the intuition of the senses through which something is given, a concept of an object as being thereby given, that is to say, as appearing." *Ibid.*, p. 126.

assertion which must be a special case of assertion in general. Assertion involves the recognition of relatedness, and of the transcendental. To hold that we have nothing but impressions and ideas is to hold a doctrine whose elements are neither impressions nor ideas. Therefore Hume's epistemological objection to the ontological statement of necessary temporality is grounded in an epistemology, that whatever the success of its rivals, is self-contradictory so long as it asserts the existence for knowledge only of atomic impressions and ideas.

Proposition III. — Whenever an event A which has a determinate characteristic K is followed by an event B, B will have a determinate characteristic L which is correlated with the characteristic K; provided that the principle of the uniformity of nature is true.

This proposition is forbidding in appearance only in the interest of precision. It intends that so far as a series of events is similar to another series, there will be similar correlations within the two series. Thus if I hurl a 10 pound lead weight with a certain shape from a 500 foot tower today, and you hurl another 10 pound lead weight with the same shape from the tower tomorrow, all other conditions including the force with which we hurl the weights being equal on the two days, the weights will take the same time interval to reach the ground. That this is the case clearly supposes that tomorrow will be like today. If this supposition be correct, causality has the minimal meaning of constant correlation. As we shall shortly note, current fashions in philosophy stop short with this meaning.

Naive, pre-Humian empiricism tacitly took for granted the principle of the uniformity of nature, relying upon it as an unarticulated self-evident axiom.¹⁴ Precisely because it was unarticulated, it was unexamined and therefore unchallenged.

¹⁴ But cf. the proof of the necessity of causes offered by Locke (modifying an argument of Clarke's) who held that whatever is produced without any cause is produced by nothing, which cannot be, because nothing cannot produce something. (*Essay*, Book IV, Chapter X, Section III.) Cf. Charles W. Hendel, *Studies in the Philosophy of David Hume*, Princeton, Princeton University Press, 1925, pp. 60-1. Hume's refutation of Locke's proof can be found in the *Treatise*, Book I, Part III, Section iii.

One of Hume's great contributions to philosophy was to recognize that an empiricism had no right to this principle as a necessary axiom. The uniformity of nature is a synthetic, material, necessary proposition, lying at the root of predictive empirical reasoning. But if empirical reasoning were all that could be relied upon in dealing with matters of fact, it depended upon an illegitimate principle, when extended to the future. Hume's argument can be put in the form of two arguments.

- All reasoning is either *a priori* or empirical.
- No *a priori* reasoning applies to matters of fact.
- ∴ All reasoning about matters of fact is empirical.
- All reasoning as to the future depends upon *a priori* reasoning.
- No *a priori* reasoning applies to matters of fact.
- ∴ No empirical reasoning applies to the future.

Scepticism immediately follows upon the refutation of both empirical and *a priori* reasoning as methods of prediction. This scepticism Hume was honest enough to announce. Post-Humian empiricists have been less honest than their master. Impressed with what they thought was his denial of *a priori* reasoning, they failed to understand how thoroughly he had demolished the foundations of empiricism as well. Empirical theory all depends, Hume shows, upon non-empirical principles, and is therefore necessarily false if extended to include all reasoning of a synthetic order. Of the more honest post-Humian empiricists there are two schools, the hard and the soft. According to both schools the uniformity of nature is a "postulate," a proposition presupposed by all empirical reasoning, but not proved by it. According to the hard wing, a postulate is anything that anyone, provided he is consistent, may choose to hold, and the postulate of the uniformity of nature is presumably one of these things that many have chosen, and is therefore a convention. According to the soft wing, the postulate of the uniformity of nature is just something that everyone has to hold because everyone wants to be scientific. The hard wing is best represented by Russell in some of his moods, as e.g. in one of his latest works.

David Hume (Russell writes) is one of the most important among philosophers because he developed to its logical conclusion the empirical philosophy of Locke and Berkeley, and by making it self-consistent made it incredible. He represents, in a certain sense, a dead end: in his direction,

it is impossible to go further. To refute him has been, even since he wrote, favorite pastime among metaphysicians. For my part I find none of their refutations convincing...¹⁵ Hume's scepticism rests entirely upon his rejection of the principle of induction. The principle of induction, as applied to causation, says that, if A has been found very often accompanied by B, then it is probable that on the next occasion on which A is observed, it will be accompanied or followed by B. If the principle is to be adequate, a sufficient number of instances must make the probability not far short of certainty. If this principle, or any other from which it can be deduced, is true, then the causal inferences which Hume rejects are valid, not indeed as giving certainty, but as giving a sufficient probability for practical purposes. If this principle is not true, every attempt to arrive at general scientific laws from particular observations is fallacious, and Hume's scepticism is inescapable for an empiricist. The principle itself cannot, of course, without circularity, be inferred from observed uniformities, since it is required to justify any such inference. It must therefore be, or be deduced from, an independent principle not based upon experience. To this extent Hume has proved that pure empiricism is not a sufficient basis for science."¹⁶

The soft wing wrote the nineteenth century logic books, and has Mill for its spiritual fountain-head.¹⁷ The hard wing of post-Humian empiricism is logically the only respectable one; but its position has serious consequences. If the validity of science is warranted by nothing but a convention, it can as well be discarded as observed. By the substitution of other arbitrary postulates for that of the uniformity of nature it is possible to deduce that the sun will be blue tomorrow. The device of verification is of no help. That the sun rose orange yesterday and the day before, and every day before that, in living memory, does not warrant the supposition that it will tomorrow. It may well not. The postulate, therefore, of the uniformity is never verified, for all verification depends upon it. If this is the case, each man to his postulate and the devil take the dullest. This state of affairs is hardly what even the "logical empiricists" could call a justification of science.

To such a pass as this must a pure correlation theory come. To avoid the debacle which he recognized to be implicit in Hume pure, Kant invoked the same principle as he had used to solve the preliminary dilemma of necessary temporality.

¹⁵ *History of Western Philosophy*, p. 659.

¹⁶ *Ibid.*, pp. 673-4.

¹⁷ See his *System of Logic*, III, xxi.

While admitting that causality could be understood as mere correlation grounded in the uniformity of nature,¹⁸ he made the postulate of the uniformity of nature a necessary one by shifting it over to the mind where it became a formal condition of understanding. The mind not only must perceive everything as spatial and temporal, but must judge its perceptions as items in a causal series. To deny the uniformity of nature is an absurdity because synthetic empirical judgement, by its very nature, is among other things causal.¹⁹

But as in the case of the problem of Time, it is not necessary to draw upon a desperate doctrine such as Kant's. We may instead deny that the principle of the uniformity of nature is a postulate at all; and if we do, we arrive at our fourth proposition.

Proposition IV. — The "uniformity of nature principle" so far as it asserts, not that the future must of necessity precisely resemble the past, but only that the future is a selection of the possibilities inherent in the interaction of present actualities, is a necessary truth.

If this proposition is true, and can be made out, we do not have to fear that we shall wake up tomorrow to find ourselves in a four dimensional space waving elephants' trunks, and intoning, with a chicken's screech, hymns of prayer to a newly discovered demon. To be confident that this will not happen we must *know* (not merely postulate) that nature is uniform in the sense explained.

¹⁸ Cf., the Second Analogy of Experience. *Ibid.*, p. 219. Kant does not consider whether there are any alternative formulations of the problem of causation, other than that which he takes up — the problem of relating past to present events.

¹⁹ Cf. the Second Analogy, especially p. 225 where Kant writes, "If, then, it is a necessary law of our sensibility, and therefore a *formal condition* of all perceptions, that the preceding time necessarily determines the succeeding [Kant has already proved that it is] (since I cannot advance to the succeeding time save through the preceding), it is also an indispensable law of *empirical representation* of the time series that the appearances of past time determine all existences in the succeeding time, and that these latter, as events, can take place only in so far as the appearances of past time determine their existence in time, that is, determine them according to rule."

The assertion, or the assumption, that we do in effect know the principle of the uniformity of nature to be true, has been challenged on two levels, the first ontological and the second epistemological. The heart of the ontological objection is that the very concept of influence which marks off any theory of causality from one of mere correlation is self-contradictory and absurd. What can possibly be meant by influence or power? There is an event, and then there is another event. If the first event persists in the second, it is not different from it. And if it does not, in what sense can it be said to be responsible for it? This is of course an argument of Bradley's.²⁰ It is not always realized however that Hume had a similar argument. In discussions of Hume's theory of causality attention is usually concentrated on his epistemological arguments, and on the psychological explanations which he has for the origin of the idea of necessary connection. But over and above his settlement of the question by recourse to the machinery of impressions and ideas, Hume asks, as Bradley does, what possible meaning "power" or "influence" can have. If power is a quality that an actuality has along with other qualities, then it characterizes it and nothing else. But if it is an "influence" it must characterize another; but then it is not a quality of the first thing.²¹

The most notable figure in the history of Western thought to be impressed by this difficulty was Leibniz. The desperate doctrine which he evolved, and which is usually more marvelled at and ignored, than carefully considered, arose out of the necessity of reconciling mathematical physics with the demands of his metaphysical logic. Again and again Leibniz points out in his writings that however useful the explanations of physics may be in a limited context, they still make use of a principle which is as mysterious as any ever invoked. What is this strange power that somehow or other passes through things and makes them obey gravitational laws? Failing to find any meaning for this power, or for power at all, he perforce had to deny real influential beings. Attempting therefore to be true

²⁰ Cf. *Appearance and Reality*, pp. 56-61.

²¹ Cf. the *Treatise of Human Nature*, ed. L. A. Selby-Bigge, Oxford: Clarendon Press, 1888, p. 161ff.

at once to the apparent facts of influence, and the apparent ontological absurdity of the notion of influence, he invented pre-established harmony as a way out of the difficulty.²²

The necessity for a desperate doctrine such as Leibniz's disappears if our account of the interaction of beings is shown not to involve inconsistency.²³ Suffice it now if we note that the whole strength of the ontological objection is concentrated in the crucial proposition that power or influence is a self-contradictory and absurd notion, incapable of rational explanation.

On the epistemological level the denial of the necessary truth of the principle of the uniformity of nature rests upon the proposition that we know only what we observe and what we can deduce from what we observe, and that power or influence is neither observable nor a deduction from an observable. Despite the frenzied attempts of later critics to discredit his argument, there is no question that Hume's conclusions follow from his premise. Influence is not an observable, and a purely phenomenalist (i.e. empirical) account of experience can never invoke it as a category. That this is the case Hume made entirely evident in his now famous analysis of the billiard balls :

When we look about us to external objects, and consider the operation of causes, we are never able, in a single instance, to discover any power or necessary connection; any quality, which binds the effect to the cause, and renders the one an infallible consequence to the other. We only find,

²² Leibniz, *Monadology*, especially L. LI, LXXXI. Cf. LI. "But in simple substances the influence of one Monad upon another is only ideal, and it can have its effect only through the mediation of God, in so far as in the ideas of God any Monad rightly claims that God, in regulating the others from the beginning of things, should have regard to it. For since one created *Monad* cannot have any physical influence upon the inner being of another, it is only by this means that the one can be dependent on the other." Italics mine. Cf. also the Introduction to the *New Essays*. It may be pointed out also that the metaphysical difficulty of the notion of efficient causation was recognized by Descartes, who, however, made little of it save as a means of buttressing his proof of the existence of God, and by the Occasionalists. Cf. Norman Kemp Smith, *The Philosophy of David Hume*, London: MacMillan and Co., 1941, p. 369, and Hendel, *op. cit.*, pp. 207-8. For an interesting note on the relation of Hume's view of causation to that of Leibniz, see the latter, p. 61n.

²³ Cf. below pp. 73-77.

that the one does actually, in fact, follow the other. The impulse of one billiard ball is attended with motion in the second. This is the whole that appears to the *outward* senses. The mind feels no sentiment or *inward* impression from this succession of objects: Consequently there is not, in any single, particular instance of cause and effect, anything which can suggest the idea of power or necessary connection.²⁴

The implications of Hume's masterly analysis not even he himself understood; in effect he had succeeded in undermining the whole fabric of empiricism by showing it to be absolutely sterile of result. His own positive philosophy, as has frequently been pointed out, makes tacit and even open use of the category of causality over and over again.²⁵ We find, for instance, such chapter titles as, "The Causes of Belief," and "The Origin of Ideas."²⁶

Yet the refutation of Hume does not rest on a mere *ad hominem* argument, but rather upon an examination of his preliminary premise that all valid propositions (aside from those of logic and mathematics) treat either of perceptions or their logical implicates. To offer this premise as true (as the logical positivists do) is to be faced with insuperable difficulties, among them the following:

1. In the very act of asserting that only the observed is known, we transcend the particular observable currently observed.
2. As Whitehead continually points out in *Process and Reality* the decision to allow only the deliverances of sense experience as data for knowledge is completely arbitrary. In his language,

One reason for the philosophical difficulties over causation is that Hume, and subsequently Kant, conceived the causal nexus as, in its primary character, derived from the presupposed sequence of immediate presentations. But if we interrogate experience, the exact converse is the case: the perceptive mode of immediate presentation affords information about the *percepta* in the more aboriginal mode of causal efficacy.²⁷

3. As Kant takes so much pain to show in the *Critique of Pure Reason* the mere fact of any experience involves trans-

²⁴ *Enquiry*, Section VII, part i, p. 63.

²⁵ Cf. Whitehead, *Process and Reality*, p. 213.

²⁶ *Treatise*, Part III, Section viii, and Part I, Section i.

²⁷ *Op. cit.*, p. 270.

experiential or, in his language, transcendental factors.²⁸ In the first place there is the experiencer who is not only known in Hume's way (as a particular impression or as a series of them) but also as that which has the particular impressions. The *I*, Kant's transcendental unity of apperception, is not an implication of the impressions which I have in examining myself, but is that which is necessarily involved in any act of examination as the subject of that act. To say that I only perceive this impression or that, is still always to say "*I* perceive . . ." This *I*, which has for its minimum meaning the unity of apperception, is a necessary feature of all experience.²⁹

Assuming therefore, for the time being, that we are able to make the notion of influence meaningful, and having demonstrated that the epistemological objections are based on a false

²⁸ "Transcendental Analytic", Book I, Chapter II, Section II, subsections 2, 3, and 4.

²⁹ It is perhaps worthwhile to note that Kant's analysis makes use of a category that is frequently confused with logical implication. It is quite true that the *I* is not a logical implication of the fact of an experience. Logical implication is always between sets of concepts of the same kind. Thus propositions uniting concepts whose extensions are all sense data can only be made to yield similar propositions as implicates. The *I* is rather the result of what we might call a "metaphysical involvement". Cf. John Dewey, *Logic: The Theory of Inquiry*, New York, Henry Holt and Co., pp. 278ff. Anything is metaphysically involved in anything else when it is seen to be a condition of the other's being. So the *I* as transcendental unity of apperception is understood to be metaphysically involved in all experiences as soon as experience is carefully analyzed. To use a familiar illustration — the fact that my watch has a shape is not a logical implication of the fact that it has matter, unless we add to the premise *This watch has matter*, the major premise *All things which have matter have shape*. But it is this premise precisely which we are after. It cannot be deduced from an enumeration of observed cases. It can be arrived at however if we recognize that the very meaning of a material thing is that it be also a formed thing, just as it is the meaning of a surface that it be a surface of something. We know that to have matter is also necessarily to have shape; matter is "metaphysically involved" in any shaped being. In the observation of myself as object, myself as subject is necessarily involved, ontologically because myself as subject and myself as object are both aspects of me, and epistemologically because to the mind the category of metaphysical involvement is as available as is that of logical implication.

premise,³⁰ we may admit the uniformity of nature to be more than a postulate, being rather a necessary truth grounded in the fact of the existence of multiple beings of wide but limited possibilities. As to what this involves for philosophy depends upon our fifth proposition. Broadly there are only two alternatives. The first is that of complete determinism. It may be expressed as the following. *Proposition V.: Not only is Proposition III true, but it is further true that every set of propositions ingredient in an event A is constantly correlated in a determinate manner with every set of propositions ingredient in A's immediate temporal successor B.*

The meaning of this proposition is that whatever happens can happen in only one way, and that way is already predetermined by what has happened. The position is aptly stated by Leibniz :

As the individual concept of each person includes once for all everything which can ever happen to him, in it can be seen *a priori* the evidences or the reasons for the reality of each event and why one happened sooner than the other.³¹

In its crudest form determinism has been expressed in the atomistic mechanism of philosophers such as Hobbes'.³² According to this theory all beings behave according to certain laws. They behave thus apparently because the laws represent some external power which passes through things and makes them behave appropriately. When a billiard ball hits another, the path of the second is already determinate since it depends upon the conjoint operation of a power, and the mass, position, shape, etc., of the ball that has been hit.

Simple mechanism, as has been pointed out on countless occasions, is a doctrine that is self-refuting. For a mechanist always insists that at least one set of propositions has another than physical cause, the set of propositions, namely, which set out the mechanist attitude. If what everyone says is dictated by irrelevant events in the cortex, presumably the statement that this is true is also nothing but the result of an irrelevant event in the cortex, and therefore can safely be ignored.³³

³⁰ See above, pp. 64-65.

³¹ Leibniz, *Discourse on Metaphysics*, XIII.

³² Cf. Hobbes' *Elements of Philosophy Concerning Body*, especially Chapter VIII.

³³ For a lucid and definitive statement of this dilemma, cf. Brand

But among the very ablest critics of simple determinisms there are proponents, like Professor Brand Blanshard, of richer determinisms. According to the view of this school, the error of behaviorisms is that they do not acknowledge mental events as genuine causal factors. They should on the contrary, the school holds, recognize that mental events are of the highest causal importance, and that in addition all causality has somewhat, if not altogether, the character of logical necessity.

These richer determinisms demand that the state of affairs at time *B* be deducible from the state of affairs at time *A*. On the one hand they may justify this demand by grounding it in the internal nature of events; or on the other hand, by grounding it in an external power. Let us see whether such a demand is in any sense intelligible.

If the latter alternative is taken, it supposes that time is external to events, which are constituted by, and derive their entire being from, some external force, be it God or the Absolute. But since human judgments are events, judging beings must also be creatures of the eternal power; there are therefore three possibilities.

a) When I judge, I always speak the truth, because it is only Truth that the Absolute makes me speak. But then no one would be in error, including the critics of determinism. In effect, when all is true, truth ceases to be a significant category. In this sense then determinism denies the principle which validates it, the principle of contradiction. For both determinism and indeterminism would be true under such circumstances.

b) When I judge, I always speak false, because the Absolute makes me confused and mistaken. But then again, such a doctrine is self-contradictory, for it must truly assert that there are no true propositions.

c) When I judge, I sometimes speak truly and sometimes falsely.³⁴ But since my judgment is something imposed upon

Blanshard, "Current Strictures on Reason," *Philosophical Review*, LIV (1945), pp. 345-68. Cf. also Paul Weiss, *Nature and Man*, Ch. I.

³⁴ The device of "degrees of knowledge" cannot be invoked to justify a fourth possibility, "Sometimes I speak more truly and sometimes less

me, I can never know whether I speak true or false. For the judgment that my judgment is correct is itself something that may be either True or False as the Absolute happens to decide. When I judge that my judgment is correct, the judgment that that judgment is correct is either, according to this hypothesis, true or false. It can only be warranted by another judgment; but this judgment itself can be either.

There is no end to the vicious regress of judgments about judgments about judgments. Determinism grounded in the supposition of an external power is thus either false or irrelevant.

But suppose the former alternative is taken, and we hold that events are connected in the same way as propositions in logic are; that is, have within themselves the guarantees of their implicants. This too is untenable; for the very essence of logic is that it is non-temporal. When I say that a proposition *P* implies another proposition *Q*, I do not mean that there is first a proposition *P* and then a moment later, proposition *Q*, and that *Q* came into being because of *P*. I mean rather that so far as it is true at any time that *P* is the case, it is equally true that *Q* is the case. It is apparent therefore that so far as strict deducibility from one another is concerned, propositions can be regarded as either eternal, or (which is the same thing) as simultaneously ingredient in present reality.

In what sense then can causality be analogous to logical implication? Professor Blanshard answers with an example. The story goes that an Abbé entered a room where some ladies were gathered, and announced, "My first confessor was a murderer." Shortly afterwards the Squire entered and said, "I was the Abbé's first confessor." According to Professor Blanshard "A conclusion was of course produced in the ladies' minds . . ." ³⁵ Just as this is an example of causality as logical inference, so ultimately we may suppose everything else is.

truly." For there is the same difficulty in determining whether this proposition is more or less true as there is in determining whether it is true or false. How do I know whether determinism has a higher degree of truth than indeterminism, unless I can say with assurance that "Determinism is truer than indeterminism"? But all I can say is that this proposition may or may not be truer than its contrary; I can never say that it is truer.

³⁵ *The Nature of Thought*, I, p. 495.

But we do not have to concern ourselves with everything else, for there is a confusion right at this point. The confusion depends upon the Idealist's assimilation of the proposition to the judgment. The actual implication does not need time to be; so long as it was true at any one time that the abbé's first confessor was a murderer, and that the squire was the first of the abbé's confessors, the squire was a murderer. The squire did not become a murderer after or because of the other two propositions. What takes time is an inference. But one can always refuse to make an implication the basis of an inference. The error is in the statement that "a conclusion was produced in the ladies' minds" a statement that is both empirically and metaphysically unsound. As a matter of fact there are people who fail to draw correct inferences; and as a matter of metaphysics, there is no demand that they should.

Professor Blanshard has not only not made his point; he has made the opposite. By invoking logic, he has brought the enemy directly into his camp. For the necessary, which is the subject of logic, is timeless. There are necessary truths, but there are no necessary judgments.³⁶ Whatever takes time is to that extent unlike the necessary, for the necessary is an inescapable analytic aspect of either some or all events, and a necessary implication involves the constant coingredience in a given set of events (possibly the set of all events) of two or more such analytic aspects. But concrete individuals are temporal beings, not analytic aspects of them.

We have seen that the claim of determinism is that the occurrence of an event *B* is logically deducible from the occurrence of an event *A*. This claim presupposes, as its ontological base, that an efficient cause is a guarantee of that which will follow it. But let us see what this means. It means that that which has perished, though perished, constitutes and determines the now existent.

The notion of efficient causation thus stated is simply absurd. It supposes that the past can project itself into the future. But the past, as past, is dead, finished and gone, and can

³⁶ I do not mean that there are no judgments which ought never to be made, but only that there are no judgments which it is impossible to make.

do nothing.³⁷ It cannot be anything for the present save as it persists. Whitehead, who rejects the simple notion of efficient causality, nevertheless supposes that a being which comes to be and vanishes in an atomic instant persists as an object for others while ceasing to be anything for itself.³⁸ But to be something for another, it is necessary to be something for oneself. The past, therefore, as past, can be nothing for the present. The whole notion of an efficient cause as an event that disappears and yet guarantees that that which follows it, although in a universe in which its predecessor is no more, will behave in such and such a way and have such and such a character, is, as Hume saw, not only unwarranted but nonsense. We can see how much more important is Hume's critique of the doctrine of efficient causality than the merely epistemological analysis, grounded in an inadequate sensationalism, that is so often held to be the sum of his contribution to philosophy.

If we hold to a simple doctrine of efficient causation, Hume is unanswerable. The past, as past, is confined to the span of time that ends with the present's beginning. But if this is the case, it cannot self-contradictorily also reach out into the present. The present must therefore be a totally new occurrence; and if it is, it can be only by chance that the new occurrence is anything like the old. It is for this reason that purely epistemological refutations of Hume, such as that set out by Professor Montague, miss their mark.³⁹ For what Hume has shown, to the embarrassment of some of his critics, is that so long as our only notion of causation is that of "efficient causation", any rational explanation of the Universe must insist upon *lack of connection*, not upon epistemological but upon ontological grounds. Hume does not only show that there is no reason to believe in causes; he shows that the belief in causes is an absurdity, if causes are dead things that as dead insure what the character of live things is going to be.

For the dead as dead is that which by definition is atomic with regard to the future, being terminated and self-enclosed

³⁷ Cf. Paul Weiss, *Reality*, pp. 211, 246.

³⁸ *Process and Reality*, pp. 44-7.

³⁹ See his: *The Ways of Things*, New York: Prentice-Hall, 1940, pp. 182-8.

at least at that end. The self-enclosed is necessarily unrelated to anything outside the area of its self-enclosure, and therefore cannot be related by the relation of influence to anything in its future.

Approaching the problem from the side of efficient causation, Dr. Paul Weiss⁴⁰ improves somewhat on these determinisms. To necessitate something, he holds it is necessary to be there when that something happens. But since a cause is gone by the time an effect appears, it can have nothing to do with that effect. We must acknowledge, he writes, not only the cause, but a free course, which together with the cause necessitates the effect :

An effect is made possible by the co-presence of antecedent things, its "cause"; it comes to be as the outcome of a dynamic course of "causation". The togetherness of a lighted match and gasoline determine what can happen; their interplay determines what does happen. And what does happen is what can happen made determinate, concrete, and present. The interplay of match and gasoline is an event, an ongoing in which each participates and in which each is modified, a course by which a prospective effect, a possible kind of explosion, is made determinate, to become a present, actual, unique explosion which never was before and never will be again.⁴¹

This formulation is however not much of an improvement on determinisms. We may state its difficulties in the form of a series of dilemmas.

1. Either the cause is temporally prior to the course, or it is not, and 2. either the course is temporally prior to the effect, or it is not.

1. If (a) the cause is temporally prior to the course, the cause cannot, as past, affect the course. But then the effect which is affected by the course can have nothing to do with the cause. If on the other hand (b) the cause is not temporally prior to the course, it is either (i) co-existent with, or (ii) a component of the course. If it is merely co-existent with the course, it cannot affect the course. We must therefore assume that it is a component of the course. Let us now turn to the other alternative.

⁴⁰ See his *Nature and Man*, Ch. 1 and 2.

⁴¹ *Ibid.*, pp. 5-6.

2. If (a) the course is temporally prior to the effect, the course cannot, as past, necessitate the effect. If (b) the course is not temporally prior to the effect, it must be either (i) co-existent with or (ii) a component of the effect. If it is merely co-existent with the effect, the course cannot affect the effect. We must therefore assume that the course is a component of the effect. But we have already said that the cause is a component of the course. Therefore the cause must be a component of the effect. But if it is a component of the effect, it is not an efficient cause. The upshot is that if causes are to be understood as efficient causes, they cannot exist. For if a cause is a real cause, it must be a component of the effect. But if it is a component of the effect, it is not an efficient cause, and therefore not a cause in the defined sense of the term. The problem is merely complicated by having to connect causes with courses, and courses with effects, instead of merely causes with effects. Rather we must recognize that the whole pattern of analysis beginning with the attempt to explain how temporally prior events necessitate present ones is a mistaken one.

The doctrine of efficient causes, of past events as past necessitating the future, is necessarily false, either because it self-contradictorily requires that the atomic self-enclosed be nevertheless related to something, or because by positing a monotonous external power it denies the possibility of telling truth from falsehood.

We must therefore recur to the tradition of Aristotle in which causes are understood as analytic or real components of substantial individuals.⁴² This tradition is carried on in part by Whitehead (who approaches the problem correctly, but spoils his account by insisting upon the atomicity of substantial beings),⁴³ and finds brilliant reaffirmation and reinterpretation in Dr. Weiss' earlier work. His chapter on "Mellontological Causation" in *Reality* will, — though he seems to have aban-

⁴² Cf. *Physics* 194b23-195b21, *Metaphysics* 983a26-32, and V, ii, *Posterior Analytics* II, xi, and *De Generatione et Corruptione*, 318a9.

⁴³ Whitehead, in his doctrine of "objective immortality" has to hold that beings somehow persist as something for others, even though they have vanished altogether from the Universe. Cf. *Process and Reality*, pp. 41-4.

doned it — I feel sure, be recognized one day as a revolutionary achievement in the history of modern philosophy. It is on the basis of the doctrines of this chapter that we must find our substitute for the fifth proposition.

Part II

The Meaning of Causation

I. THE MELLONTOLOGICAL THEORY.

1. *Exposition.*

At any given moment of time, the Universe consists of overlapping actualities and their virtual regions.⁴⁴ At that moment each being is actually incomplete, since as actual each fails to encompass the whole of reality; as virtual each is complete, privationally possessing that which is outside itself. Since each is something for itself, and surrounded by things outside itself, each acts to make itself complete. Since each is something for other beings, and is outside other beings, other beings act to use it to make themselves complete.

At any given moment all the actualities are contemporaneous. They are also needed by one another, and are therefore abstractly past and future to each other. An actuality is abstractly future for another when regarded as the terminus of its needs, and abstractly past when regarded as that which needs the other.⁴⁵

⁴⁴ See my "The Nature of the Individual" in this *Review*, vol. I, no. 2, p. 61ff.

⁴⁵ "An actuality in which another's virtual region terminates is abstractly future for the actuality out of which that virtual region vectorally originates. An actuality is thus contemporary with and abstractly future for the selfsame actualities because the extension, which intervenes between them, is at once non-directional and vectoral. Whatever actualities lie beyond me now are abstractly future to me, privately and publicly, being the termini of my virtual regions and the possessors of the virtual regions which now overlap me, as one who has the same "sense" as those virtual regions. Since what applies to them applies to me, I am future to them as well, the temporal disparity between us as both public and private, being cancelled by the reciprocity of our vectoral approaches to one another . . . A

A causal act is the expression of an effort by an actuality, prompted by other actualities which it needs and which are abstractly future to it, to satisfy its needs. If a being is to engage in a causal act, it must have the capacity to initiate effort, and to be prompted by that which is outside itself. Such is the import of the doctrine of transcendence-immanence as illustrated in the activity of substantial beings. To be is to be at once something having a private nature (thus being able to act) and a status in a public world (thus confronting something to act upon).

An actuality, being something for itself, must strive to complete itself, not another. When it aims at the incorporation of another, it aims to incorporate it and yet remain itself. It therefore orders the other actualities in the Universe in terms of their usefulness to its characteristic perfection, a usefulness that is a function of their degree of perfection and the degree of internal adjustment necessary to assimilate them. The result of this ordering may be called the hierarchy of pertinents.⁴⁶

A chicken that coexists with me is valuable to me. But its intrinsic value does not alone determine the pertinence which it has to me. For if I am already overfed, I would have to adjust myself in painful ways in order to assimilate it. But if I am hungry, I can assimilate it with a minimum of painful adjustment. The chicken is therefore, although perhaps constant in its own degree of attained perfection, more or less pertinent to

present actuality is abstractly future to others, but since those others are also present, they must, from the standpoint of that actuality, be earlier in time than it. The same actualities that are abstractly and privately future are thus abstractly and privately past for me, the only difference being that in the former case I am viewed as a being desiring them, and in the latter as a present object desired by them. They are, for me, abstractly, privately and publicly past, having virtual regions terminating in me, and they are overlapped by my virtual regions so as to yield a public vectoral object having the same "sense" as those regions. The book before me now is at once actually contemporaneous and abstractly future and past for me. I know it as that which is now part of a common world with me, as that in terms of which I act, and as that which acts in terms of me." Weiss, *Reality*, pp. 233-4.

⁴⁶ *Ibid.* pp. 245-53.

me, depending upon the degree of internal adjustment which I would have to make in order to assimilate it.⁴⁷

An actuality is thus, as we have said, conditioned by a hierarchy of pertinents, but it is not only so conditioned. For since there are real things outside it that it needs, these things (being real) must have their own inwardness, and must therefore be striving after self-completion. Were the chicken which I ate not something for itself as well as food for me, it could not be, and could not be food.⁴⁸ As standing over against me, with its own characteristic needs, it is something which is not only pertinent to me but which also influences me. We must therefore acknowledge not only the relevance to an actuality of a hierarchy of pertinents, but also of a hierarchy of influences.⁴⁹

Since an actuality is influenced by other actualities it also must influence them; for if they stand over against it, it must equally stand over against them. For if it did not, it would not be anything for them to stand over against. The hierarchy of influence must then be a function of my power over others and their power over me. The more I have power over others the more I dominate them, and therefore the 'more available they are to me. On the other hand, the more others have power over me, the more they dominate me, and the less they are available to me. The hierarchy of influence is thus a function of the independent factors of availability and dominance :

A present actuality is thus conditioned by the objects in its abstract future according to the degree of their availability and the actual domination to which they subject it. Everything in the abstract future is, accordingly,

⁴⁷ This trivial example at once illustrates the meaning of pertinence and the impossibility of absolute perfection. For the absolutely perfect is that which has assimilated everything; but to assimilate everything is either self-contradictorily to reconcile opposites in their fullness, or to assimilate only aspects of everything and thus leave something still outside.

⁴⁸ It might be objected that our example is unfair, and that we are using chicken ambiguously to mean both the live animal and the dead flesh. Does the dead flesh, it might be asked, have needs of its own? The answer, of course, is that dead flesh is not an individual, but a 'whole'; and that the beings making up that whole do have their own inwardness, and their own needs. If an electron is an indivisible, it needs to swallow up the world, if it is to be as perfect as it structurally ought to be.

⁴⁹ *Ibid.*, p. 255.

ordered in a hierarchy of greater and less actual *influence*, which is a function of the independent factors of availability and domination. The higher the availability and the less the dominance the more congenial is the thing and the more readily will an actuality be able to master it.⁵⁰

Each actuality is thus subject to a hierarchy which is a function of the two independent hierarchies of pertinence and influence. This hierarchy, Dr. Weiss calls a hierarchy of mellontological conditions;⁵¹ the activity of an actuality is accordingly prompted by its environment as at once needed by and influencing it. It acts in the first place because it is something which can act, that is, has power, and in the second place because it needs and is influenced by its neighbors. But although thus mellontologically conditioned, each actuality has a core of freedom, which enables it to set at defiance the union of pertinence and influence which is its mellontological hierarchy. At every moment of time, an actuality, prompted by its mellontological hierarchy, acts to make itself complete. Such an act (called by Dr. Weiss, a pulsation⁵²) occurs in an atomic instant, so that there can be no temporal distinctions within it. It occurs because a now incomplete actuality, prompted by its abstract future, strives to enrich itself. Every pulsative act thus begins with an acknowledgment of the entire universe as evaluated by the actuality. This acknowledgment may be articulated and distorted in consciousness, but is in no wise dependent upon it. To acknowledge the hierarchy of pertinents is to act in terms of what is of greater and less value to the actuality; it is not necessarily to be conscious either partially or fully of what each item in the environing universe is worth.

This acknowledgment then gives way to an acknowledgment of the hierarchy of pertinents as infecting the hierarchy of influences. Here again the acknowledgment does not involve self-consciousness, for a stone falls when hurled over a

⁵⁰ *Ibid.*, p. 255.

⁵¹ *Ibid.*, p. 256. Cf. p. 246, "An actuality behaves in terms of its abstract future. The abstract future prompts its pulsative act, though it cannot prescribe what the detailed concrete nature of the result of the act will be. The operation of the abstract future on the present I term mellontological (from Aristotle's *μελλόντων*) causation."

⁵² *Ibid.*, pp. 215, 228.

cliff, and a lover may be lovesick before he knows that he is in love.

In the third stage the actuality stretches to the limit provided by the boundaries of the atomic instant, tending in the direction decided by the mellontological hierarchy, and possibly coming into contact with foreign actualities. In the fourth stage the actuality decides whether or not to attempt to appropriate that with which it has come into contact and take the risk of injury, or attempt to retire in order to avoid danger.⁵³

2. *Preliminary Evaluation.*

Dr. Weiss' analysis of causation must, I think, be accepted in principle. It is grounded in the Epochalistic Vectoral theory of the concrete individual whose validity I have already tried to demonstrate.⁵⁴ The theory makes it possible to give a genuine meaning for causation as opposed to mere correlation, without committing the fallacies essential to theories of efficient causation so clearly exposed by Hume. In its insistence on the private character of actualities, and their necessary public relatedness, it makes meaningful a notion of final causation stripped of characteristic Aristotelian errors.⁵⁵ It explains monotony and mechanical behavior as limiting cases of creative activity, thus making both intelligible. Finally it makes meaningful free activity without recourse to miracles, special powers, or help by God. But despite the importance and the strength of the main argument, there are two quite serious defects, one in analysis, and one in exposition. The defect in analysis occurs

⁵³ *Reality*, pp. 259-63.

⁵⁴ "The Nature of the Individual," this *Review*, I, pp. 61-88.

⁵⁵ "The Aristotelian final causes must be deprived of their nobility, their fixity and universality, identified with whatever is in fact real, related temporally to the beings that need them and made to provide the conditions for the attainment of a goal which is not, until attained. Each entity as future to another is something to be striven for, not as a flame which is good in itself, shining by its own glory and casting a glow on that which approaches it, but rather as a substantial and distant wood which can feed the fires which now stretch towards it, for the accomplishment of ends which are not, until they are realized. To use Aristotelian language, final causes are material, not formal in nature, matter to be used, not forms to entice." *Reality*, p. 212.

in the omission of a fifth stage in the anatomy of an act of pulsation. The defect in exposition occurs in the mere assertion without justification that there is a core of freedom in each actuality.

In the interest of a rounded account of the nature of causation, we shall try to remedy these defects by distinguishing the fourth stage of the pulsative act from a fifth, and by showing that there is an indeterminacy proper to both, explanatory of the nature of the "core of freedom".

II. THE KINDS OF INDETERMINACY.

1. *The Fifth Stage — Indeterminacy in Result.*

It will be remembered that the fourth stage in a pulsation was that in which the actuality decided whether or not to attempt to appropriate that with which it had come into contact. But were the act to stop with this decision, the Universe would be nothing but a series of decidings without anything decided. We must acknowledge therefore a fifth stage in which the actuality is modified, becoming what it was not. This distinction between the fourth and fifth stages is of particular importance. At each of these two stages there is a kind of indeterminacy.

Even in a world where every being was determined to do just this and not that, the future would still be indeterminate and unpredictable; for it is impossible to know in advance what the result of an interaction between two entities is going to be, even though those entities are exhaustively known at the instant preceding their interaction. It is impossible to know the result of such an interaction, because "the isolate nature of a contained individual is not determinate prior to the very act of division which separates it from its supervening individual, and the nature of the contained individual is not determinate prior to the very act of incorporation which deprives it of an independent status."⁵⁶

Creativity would exist whether or not there were freedom of choice. There are novelties because there are interactions whose results are not mere combinations of the interacting en-

⁵⁶ *Ibid.*, p. 201.

ties in their original nature. We may say that there is indeterminacy in the universe in this sense because of the possibility of real synthesis, a synthesis that is more than the mere aggregation of entities unchanged by their existence in the aggregate.⁵⁷

To deny genuine creativity in this world is to hold, with most traditional theists, that it would be possible for an omniscient being to know in detail what would happen in the future before it actually happened.⁵⁸ But if there is no warrant for denying genuine creativity to beings in nature, there is no reason to suppose that an omniscient God knows the future in detail. There is no paradox in the doctrine that God can be omniscient without knowing the future in detail because, as Hartshorne has pointed out, there exists no detailed future to know.⁵⁹ God is not less than omniscient because He does not know what there is not to know. He would be less than omniscient only if He were ignorant in any way of that which is now fully determinate, that is to say, if He were ignorant of the past.⁶⁰

God is omniscient because he knows everything that is. But the actual concrete future is not yet, and therefore cannot be known. If it is true, as we maintain, that the future is indeter-

⁵⁷ When a man falls in love with a woman, the character of both will be altered in unpredictable ways, because of the novel elements produced by the interaction. This unpredictable alteration would take place even if both the man and the woman had been absolutely determined by circumstances to fall in love with one another.

⁵⁸ Cf. Thomas Aquinas, *Summa Theologica*, Part I, Question XIV, Article 13.

⁵⁹ Cf. "But the incompleteness which consists in the fact that the thing to be known is itself future, is in the portion of time which is incomplete in essence and not accidentally — this incompleteness is not ignorance, and its removal is an addition to knowledge which defines an addition to reality. Omnipotence is simply that mode of knowledge in which only this kind of addition to knowledge is possible, the kind identical with the transition, for the object itself, from futurity to presentness. Nothing is vague in the perfect knowledge except as this vagueness coincides with futurity." C. Hartshorne, *Man's Vision of God*, p. 328.

⁶⁰ He must know also the present as become, but not as becoming i.e. must know the present in the fifth stage of a pulsative act (as completed), but is not able to deduce the fifth stage from the fourth.

minate, God would be less than omniscient were he to suppose that He knew it in detail. For then He would falsely suppose that He knew what was not the case.⁶¹

2. *The Fourth Stage — Indeterminacy in Decision.*

We have seen that the result of an interaction can be a novelty, and is indeterminate prior to the interaction. This result is, however, indeterminate also because in the fourth stage of an act of pulsation, a being decides whether or not to attempt to appropriate that with which it has come into contact. Ingredient in the being who decides is a core of freedom which enables it to set at defiance the prompting of the whole

⁶¹ It might be objected that this doctrine supposes that God has only probable knowledge, and is therefore not omniscient. But we must be careful to differentiate between two senses of probable knowledge, of which God has one kind but man both. God knows certainly the past and the present, and knows certainly what is probable in the future. All the propositions which he enunciates begin with "It is true that . . ." although some may end "... that x is probable." Man on the other hand begins some of his propositions with "It is true that . . ." but begins others with "It is probable that . . ." Both may end either with "... that x is true," or that "... x is probable." The "It is probable . . ." does not depend upon the indeterminacy of the fact, but upon the limitations of our information. There is no question at all that Cæsar either did or did not cross the Rubicon, and God knows whether he did. Yet the careful historian would with justice assert that "It is probable upon the evidence that Cæsar did cross the Rubicon," not because the situation is indeterminate, but because his knowledge is incomplete. Finite human knowledge is a jumble of half-truths, probabilities, and possibilities concerning the probabilities. An example of a truth is the proposition that most monotonously behaving beings will continue to behave monotonously, of a half-truth that what we want today we shall want tomorrow, of a probability that it will rain when our instruments read in this and this manner, and of a possibility that some miser will donate all his belongings to charity and enter a monastery.

The failure to distinguish the two kinds of probable knowledge is a relic of the idealistic confusion of ontology with epistemology, of being with knowing. It vitiates much of the philosophical discussion of probability, and confuses the treatment of induction, so that the historian will write as if he were a physicist, and the physicist as if he were a historian with necessarily incomplete evidence (Cf. Weiss, *Nature and Man*, p. 29). Pragmatists and other devotees of the unlimited use of "scientific method" usually contrive to make matters worse by confusing probable propositions with probable judgments, and imagining that both always refer to the future.

mellontological hierarchy. We must acknowledge this core of freedom, for although the doctrine of the mellontological hierarchy is a step above conventional determinism in acknowledging that beings act partly in terms of what is pertinent to them, and are not mere butts of stresses and strains, it is still basically a "determinist" doctrine. Only when it is insisted that there is a core of freedom enabling a being to set the hierarchy at defiance is it transformed into a doctrine that explains genuine freedom. We must not however, with Dr. Weiss, neglect to explain the nature of this core; to provide this explanation we must turn to an examination of the nature of decision.

An actuality is what it is, and to be influenced and motivated it must be something that is neither an influence nor a motivation. The dead are not prompted to do anything, and the snakes which decorate by bedpost when I am in an alcoholic stupor cannot be strangled. This truth has been clearly understood by Schopenhauer who writes :

Yet these acts of will have always a ground or reason outside themselves in motives. Yet these motives never determine more than what I will at *this* time, in *this* place, and under *these* circumstances, not *that* I will in general, or *what* I will in general, that is, the maxims which characterize my volition generally. Therefore the inner nature of my volition cannot be explained from these motives; but they merely determine its manifestation at a given point of time: they are merely the occasion of my will showing itself; but the will itself lies outside the province of the law of motivation, which determines nothing but its appearance at each point of time. It is only under the presupposition of my empirical character that the motive is sufficient ground of explanation of my action. But if I abstract from my character, and then ask, why in general, I will this and not that, no answer is possible, because it is only the manifestation of the will that is subject to the principle of sufficient reason, and not the will itself, which in this respect is to be called *groundless*.⁶²

Schopenhauer's *will* corresponds here to our "concrete individual". But however one conceive the unit of action, one must admit with him, that that unit must be something for itself, "groundless," if it is to be anything that is going to be pushed around.

Schopenhauer was however still, despite his assertions of independence, over-respectful of the contemporary scientific tradition which thought in terms of absolute mechanical causation, and so spoiled his account of the dynamic and creative

⁶² *The World as Will and Idea*, II, ii, 20.

character of the will by having its resultant phenomena always mathematically predictable in the best Newtonian way. Thus although the will is groundless, its activity is always absolutely determined by the interplay of its motives with it. His analysis would correspond to that of Dr. Weiss up to and including the recognition of the *mellontological hierarchy*. But Schopenhauer does not explain how this hierarchy can be set at defiance.

Schopenhauer's insistence that the workings of the will are subject to the principle of sufficient reason is ambiguous, containing within itself two propositions, the second of which implies the first but not conversely. The first proposition is that everything has a determining reason. Therefore once a given event *B* has passed, an omniscient God could specify without remainder the reasons of its occurrence. The second proposition is that a given event *B* is already determinate at the time when its predecessor *A* is present. Therefore an omniscient God who knew the character of the actors in an event *A*, and the motives which affected them, could specify without remainder the reasons of *B* and its nature prior to their occurrence. It is this latter proposition which must be denied.

The first proposition is undoubtedly correct, for its denial would involve us in an assertion of the possibility of creation *ex nihilo* and of annihilation, and thus force the abandonment of any attempt at the rational explanation of the universe. To be what one is is to be the necessary product of one's adventures. But this does not imply that one's adventures are a mathematical product of what one is, what one wants and what one meets.

Schopenhauer's error derives from his initial error of divorcing the subject from the object, the will from its manifestations, the private from the public. If the private is the mere ground of the public, it is much like a cinema screen which makes the showing of a film possible, but has nothing to do with the way the film comes out.⁶³ But it cannot, as we have shown, be merely this. We must therefore admit that, in Schopenhauer's terms, the general character of the will is not merely that which makes possible the operation of motives; it also has

⁶³ In actual fact of course the texture and color of the screen do alter the way in which a film appears.

its own aims apart from its motives. Translated into the terms of our analysis it means that there is a necessary tension between the hierarchy of pertinents-and-influence, and the hierarchy of pertinents *solus*. We do not seek only the best that we can do as the first hierarchy requires, we seek the best regardless of what we can do, as the second demands.

The tension is a necessary one because of the nature of actuality as transcendent-immanent. To follow Schopenhauer is to suppose that the transcendent is nothing but a means of making its immanence possible. But if it were only such a means it could not make the immanence possible, for it would be nothing and could not become immanent. The transcendent, as transcendent, has its own aim, an aim which is not lost because of its involvement in a total being. An example will perhaps make this clear. The soul, as the soul of a being which is body-and-soul, is concerned with the good of the total being, of which it is a structural constituent. But it is also concerned with that which pertains to the soul alone, and may very well neglect the good of the total being. That the soul cannot do this indefinitely or completely is obvious, for if it could, it would not be ingredient in the being. The student anxious to finish his book, and learn his lessons, may study into the night, and around the clock, but sooner or later must sleep.

The meaning of the "free core" is perhaps evident. As between the good and the best possible under the circumstances there is no good to which a being can automatically refer, and thus save itself the trouble of being free. The ultimate nature of any being involves the necessity to decide; and although there are "reasons" for every decision, the decision is not, and cannot be, merely a function of the present character of the being and its environment. For the character of the being is a set of necessarily mutually exclusive possibilities, each claiming allegiance, which only an act of decision can reduce to self-consistent actuality.

It might be objected that we have made the universe "irrational," that we have in effect denied the possibility of explaining anything, since we seem to hold that in the last analysis things happen without a reason. But this objection depends upon a misunderstanding of the nature of explanation. It is

an objection which is grounded in a denial of the 'ontological' principle.⁶⁴ But inasmuch as we must recognize the ontological principle, the demand for a reason to "explain" why an individual decides as it does is essentially an impossible demand, for it seeks to know how an actuality is constituted out of possibilities. An actuality is not so constituted; and an act of decision is an act in which the individual makes possibilities actual, an act which no reason can constitute, because all reasons depend upon such acts.⁶⁵

⁶⁴ An explanation, as Aristotle insisted over and over again, is always in terms of universals. *Metaphysics*, IV, ii. We explain an actuality by showing it to be a special case of a principle. But, as Aristotle also pointed out, woe betide us if we hypostatize the principle. *Metaphysics*, I, ix, also 1002b11-32. A principle must be universal, and being universal must not be substantial. *Metaphysics* 1003a5-16. Principles are always in the realm of the possibles, and an explanation is the process of exhibiting the substantial as that which embodies possibles. An individual is explained when seen to be characterized in such and such a way, that is, to illustrate certain principles.

A substantial actuality is not ontologically a synthesis of possibles. It is for this reason that an explanation can never explain why an individual is what it is; it can only show him as being this or that. I do not live because compounded of vitality, Hitler did not wage war because compounded of evil. Vitality and wickedness are characteristics of individuals, and we are able partially to explain a given individual when we succeed in characterizing it correctly. A full explanation of a being is as exhaustive as possible an account of his characteristics and relationships. But it is not that which constitutes the being. To recognize that this is the case is to acknowledge what Whitehead has called the ontological principle.

⁶⁵ We do not mean that there is no reason why actualities have to decide, but that there is no reason why an actuality, in a decisive moment, should prefer to insist upon acting in terms of his good alone (the hierarchy of pertinents) rather than in terms of the expedient (the full mellontological hierarchy). To the question, "Why did you kill?" I can answer, "Because I allowed passion to overcome reason". To the question, "Why did you do this?" I can reply, "Because I am the man that I am." To the question, "Why are you what you are?" no answer can be given (I can characterize myself, but, as we have said, no sum of characters can ever add up to me). Cf. Whitehead's comment, "In a sense, all explanation must end in an ultimate arbitrariness. My demand is, that the ultimate arbitrariness of matter of fact from which our formulation starts should disclose the same general principles of reality, which we dimly discern as stretching away into regions beyond our explicit powers of discernment." *Science and The Modern World*, New York : The Macmillan Co., 1946, p. 135.

An individual does not act blindly and without motives. On the contrary, as Schopenhauer notes, individuals act in *this* way or *that* because of the motives which influence them. We must correct Schopenhauer's account only by insisting that the "because" can never be a strict determinist's "because," for if it were we should have to suppose that the act of making potencies real is nothing more than another factor in the total situation, a situation which can then be read off as a mathematical function of the motives and the actualizing power. But then the actualizing power, having the same ontological status as the motives, would also be a potency. On the contrary it must be that which transforms potencies into real constituents of a concrete act, and therefore cannot be one motive among others. The power of actualizing marks an individual as free, since nothing prescribes it.

An act of decision is a free act; it presupposes a tension between the individual's absolute good (the hierarchy of pertinents) and its relative good (the full mellontological hierarchy). The resolution of the tension is an unprescribed, free act, which is lived through from within, and which marks the concrete individual as actual. An act of decision is however a determined act, for an individual's good, even as ideal, is dependent upon the rest of the universe. An act, once passed, always has as its reason the motive together with the fact that the decision actually made was that which realized in actuality the indeterminate ideal that was the motive. So it is false to say that anything happens without a reason. But it is equally false to say that reasons constitute acts.

III. THE MEANING OF CAUSE

1. *Real Causes.*

When I say that I acted in a given way "because of *X*" the *X* can be of two basic kinds, either (a) external, or (b) internal to me. This proposition is a necessary consequence of the view of causality which we have been advancing; but its truth is also evident in other ways. We do not have to reflect long to realize that the judgment, "I moved because you pushed

me," intends by "because" something different from what is intended in the judgment, "I am ill because my heart is weak". For you are external to me, but my heart is not.

a. In our discussion of the mellontological hierarchy, we have been concerned with that which prompts and that which is prompted by the pulsative act, we have also endeavored to explain how and why beings are prompted, and why the past as past can never be said to prompt anything, let alone necessitate the future.⁶⁶

b. In our analysis of the act of pulsation, we have attempted to provide an outline of its anatomy. In doing this we have been attempting to discover its causes, when causes are understood in Aristotle's sense as components of a concrete act. This attempt has been similar to that embodied in Part III of Whitehead's *Process and Reality*, in which is elaborated the theory of feelings. But despite Whitehead's greater scope and more detailed and richer account — we have here traced only an outline — he failed to distinguish between the problem of aspect and the problem of real components, a distinction essential to the theory of causation.⁶⁷

Taken to mean "elements of a pulsative act," causes are either analytic derivates or real components of a unitary act of pulsation. A cause is a mere analytic derivate when it is nothing but that act approached in a determinate way from a determinate point of view. When I say "I am feeling well because I am in good health," I do not mean to say, as Whitehead would seem forced to say,⁶⁸ that health is an (eternal) object out of which I am partly compounded. I mean only that health is a characteristic of me as a healthy being. I am not what I am because of the universals I exemplify, but the universals which I exemplify do actually characterize me because I am what I am.

When, on the other hand, I say " You are an ill man because your heart is working badly," I do not either mean that

⁶⁶ We have left open the question of efficient causation, to which we shall turn in the next part of this section, p. 89 ff.

⁶⁷ Cf. my previously cited article, p. 73.

⁶⁸ *Process and Reality*, p. 299-302.

your heart trouble preceded your illness, or that a heart is merely an analytic aspect of you. I mean rather that you are a complex individual, having real parts, and that your pulsation at this instant has the character that it does because it is compounded of parts which have this determinate character. The analysis of a complex act into its "causes" is at once a necessary enterprise, and an enterprise necessarily doomed so far as it endeavors exhaustively to explain the act.

It is a necessary enterprise because, as we have indicated, the supervening individual needs the parts over which it supervenes. And because they are parts of it, so far as we understand the way they work we are closer to an understanding of what the individual is. But on the other hand it is a doomed enterprise precisely because the intensity of the supervening individual, although deriving from its parts, is greater than that of its parts or of any combination of them. A "causal" analysis must be supplemented by an act of insight.

The empirical verification of this analysis is quite close at hand. Any doctor knows that, important as the working of a heart is to a man, two people in the same physical condition with the same heart deficiency, can do quite different things, because of the different degrees to which they can control their bodies. A weak-minded man with a slight throb will retire to his bed, at the same time that a dying missionary will travel many miles in a primitive manner to bless a new-born child. Similarly the cause of *Hamlet* is not a succession of scenes, nor is the cause of the *Fifth Symphony* its four movements.

The allusion to a symphony suggests the necessity of distinguishing between two meanings of "cause" taken in the sense of "real component". There are causes which are coexistent with the other causes of that of which they are the cause, so to speak "spatial" causes, and there are causes which are not coexistent with the other causes of that of which they are the cause, so to speak "temporal" causes.

The arms and the legs of a dead body are spatial causes of a whole, something which has its own characteristic behavior, but whose intensity is only equal to and not greater than that of its parts. The arms and legs of a living man are spatial causes of a supervening individual, whose intensity is greater

than theirs. The notes of a symphony, on the other hand, or the scenes of a play, are again causes of a whole, only in this case temporal causes. For though the symphony or the play has its characteristic virtue over and above that of its parts, it does not, as it were, push those parts around. Finally, the acts of a man's life which form his habit patterns are temporal causes of a supervening individual. For they contribute to making him what he is, and demand that the Paul who was once Saul be remembered also as the Saul who became Paul.

Many acts illustrate the two basic meanings of cause, as that which prompts and as that which is a part.⁶⁹ When I say that "I am eating because I am hungry," the hunger is at once that which has prompted me to eat and a characteristic of me as still eating and intent upon a second helping.

⁶⁹ This account of causation agrees with Bradley's (*Principles of Logic*, New York: Oxford University Press, 1928, II, Book III, Part II, Chapter II), in its insistence that the "cause" must be a "because". A cause (as that which prompts, or as that which is a real component) must be in some sense the *raison d'être* of its effect. Bradley understanding that a cause must be the *raison d'être* of its effect and believing that a cause must be in the past of its effect, drew the perfectly valid conclusion that a cause must necessitate its effect, and that therefore the causal relation was an instance of logical connection. We have already seen that the first premise is true, and that the conclusion must be false. We must therefore, as we have, reject the second premise that a cause "must be confined to the antecedent member within a law of the sequence of phenomena". *Ibid.*, p. 536. If a cause is the *raison d'être* of an effect, the cause cannot be in the past, for the past cannot project itself into the future. We should differ, of course, also from Bradley in our insistence that a cause is a *raison d'être* of its effect only in the sense that it makes it possible, not in the sense that it constitutes it without remainder.

This difference derives from our insistence upon the ontological principle, and upon our denial that the individual is merely a universal, concrete or otherwise. With Bradley we agree that "To explain a fact you must exhibit it as the instance of a general principle or meeting of principles." *Ibid.*, p. 541. But we should deny that a fact is constituted by such a meeting, insisting rather that it is the ground of an infinite number of explanatory principles. It is perhaps evident from this discussion how tightly interconnected are the solutions of the problem of the nature of the individual, the meaning of explanation, and the meaning of causation, and how necessary it is for the full solution of the third to formulate carefully and solve the first two.

2. Apparent Causes — Efficient Causes and The Laws of Nature.

Despite our analysis of a causally conditioned act as an act prompted by the abstract future of the actor, and analytically including certain characteristics as well as possibly containing real components, we must still explain what we mean when we speak, as we always do, of a cause producing an effect. When we speak in this manner we think of a cause as an event temporally prior to another and yet having a distinct relevance to it, as, in fact, an efficient cause.

The explication of an efficient cause has pressing importance for our daily practical and scientific life, for it is on the basis of efficient causation that we predict. When I play billiards I hit the ball with a cue because I believe that the cue will move the ball and that the ball will move the other ball if it hits it with sufficient force. When a physicist undertakes to examine the state of a system, he does so partly because he wants to predict the state of the system in the near or distant future. Such an attempt to determine the nature of the future before it is actual depends upon the use of a concept of efficient causation.⁷⁰

Strictly speaking, an efficient cause can be nothing but the temporal antecedent of its effect, for it is defined as that

⁷⁰ When Russell writes that science has ceased to be interested in causality (*History of Western Philosophy*, p. 664; cf. also *Philosophy*, New York: W. W. Norton and Co., 1927, Chapters XI and XIV), he does not mean that natural science has abandoned its interest in the future state of a system as relevant to the present state, but rather that it has abandoned a concern which was never integral to it, a concern with the *rationale* of the behavior which is being described as conforming to certain mathematical formulae. What Russell fails to point out however is that this indicates, not that the study of causality is an empty one, but that it is properly speaking not a concern of physics but of metaphysics; and that, as Schopenhauer (*op. cit.*, II, ii, 17) among others has shown, without some metaphysical explanation, the fact that the world conforms to the formulae of physics is a miracle. The positivist is a traitor to his own cause, for he relies for the justification of science upon an emotive desire to believe at least one postulate — the uniformity of nature, the truth of the law of large numbers, the validity of induction or statistical procedures, or something similar. A metaphysician, good or bad, is one who insists that he cannot live, even in one case, on faith alone.

which is in the past of the effect. Its only relation to the effect can be one of correlation. We must therefore ask why it is that we do in fact correlate some things with others, and why it is useful to do so, why the relation of the rain in Hyderabad to the birth rate in Chicago, while possibly a constant, is uninteresting, but the relation of rats to bubonic plague is interesting. Why do we speak in the one case of causes and not in the other?

Every act in the universe is unique, having a flavor of its own, and thus intrinsically unduplicatable. Every act however has certain features in common with other acts, and can be regarded as having only those features, in abstraction from those which it does not share with others. Thus a murderer and an executioner both inflict death, both possibly by gunfire. Although the specific acts in which they engage are individual and replete with rich detail, they may be regarded only as illustrations of the process of killing. It is only when we thus restrict by abstraction that we can speak of causes and effects. A cause and an effect are both abstractions from events, mere subject-predicate units divorced from their 'adumbratéds'.⁷¹

The vice of abstraction is also its virtue, for by being made into a mere unit, an event becomes duplicatable and an item for a formula. The description of events in terms of cause and effect is a process of abstracting from those events such of their characteristics as are relevant to a formula, and showing that they in fact correspond with some formula whose properties have been investigated. A true description in terms of cause and effect thus depends, in Whitehead's language, on the two-way functioning of the eternal objects, on the one hand as elements in the formula, and on the other hand as actually exemplified by events in the real world.⁷²

The solution of the problem of finding a useful meaning for cause depends both upon that which is, and that which is not in the power of the inquirer. The solution depends upon the inquirer in the sense that it is he who must abstract this

⁷¹ For this term, see Paul Weiss, *Reality*, p. 57f.

⁷² *Process and Reality*, p. 414.

characteristic rather than that, as an item for a formula.⁷³ Mathematical physics would have hardly succeeded if physicists had not chosen to pick on the right characteristics for abstraction, the so-called primary qualities. There is nothing about water that demands that we correlate its molecules rather than its taste. But in fact we have discovered that for predictive purposes more can be done with the molecules.⁷⁴ The solution does not depend upon the inquirer in the sense that there may be no characteristics of any importance which can be correlated so as to correspond with a manageable formula. The possibility of mathematical physics is, so far as physics is concerned, a cosmic accident depending upon the existence in our epoch of monotonously behaving beings.

A cause is thus a temporal antecedent of a special kind. We may say that *X* is the cause of *Y* when any event describable as *X* is followed by any event describable as *Y*. An event is the cause of another when one known set of its characteristics is correlated with another set of characteristics which the following event has.

So far as a cause is only an efficient cause, it is nothing but a temporal antecedent. So far as the universe manifests monotony, description in terms of efficient causes will be empirically useful. But if we think only in terms of efficient causes, the uni-

⁷³ Cf. this comment of Bradley's, "To ask if the belief in cause and effect results from the mere repetition of sequences, is to put the question in a form which ensures and necessitates an erroneous answer. For, if the definite sequence has once been perceived, what need can there be for further repetition? The knowledge that *mere B* has followed on *mere A*, would be itself the very goal which we desire to reach. But on the other hand if this pure sequence is *never* experienced by *mere* sense-perception, then, with all our repetition of innumerable perceptions, we do not ever repeat the experience of that sequence. The true point at issue is the way in which, from impure presentations, we derive the pure intellectual sequence of *B* from *A*." *The Principles of Logic*, II, p. 540.

⁷⁴ Cf. *Ibid.*, p. 542, "I know that it has been said... that it is frivolous to tell me that this bottle breaks *because* all bottles break. But I confess I could never see the *bare* tautology. For the particular nature of our one bottle is in this way connected with a general law. It does not break because it is a black bottle, or a quart bottle, or a bottle made by an infidel and on a Sunday, but because it possesses an unstated quality common to other bottles. And this quality is a reason why it breaks."

formity of nature will have to be, as it is for Russell, a mystery. The success of future correlations cannot be justified by those in the past. To speak of a billiard ball producing motion in another is a useful verbal habit, but it cannot be taken as a true description of an actual event. So far we must agree with Hume. On the other hand we cannot leave the constant correlation of the clash of billiard balls with the motion of both of them a mere mystery, as Hume is forced to. It is for this reason that we have examined the notion of causation and shown its fundamental meanings to be other than those of "efficient causation". The possibility of analysis in terms of efficient causes depends upon the process of melltontological causation and the relatively monotonous behavior of the majority of beings.

A law of Nature is thus a law which every event in principle can break. The idea of such formulae as gravitation being divine objects which make themselves flesh, to work out their rigid pattern in Time, is an idea that must be abandoned. It derives, as Galileo saw so well,⁷⁵ from a Platonic view of the relation of mathematics to existence, a view which fails to explain the relevance of essence to existence after their radical divorce.⁷⁶ A law of Nature does not have mere epistemological probability, but rather ontological probability, so far as it claims to describe the working out of every event in the universe prior to its actual unfolding in being.

The laws of Nature (or as Dr. Weiss calls them — the laws of matter)

"then must be abbreviations for the statistical averages of the patterns of the behaviors of material units or wholes of them. Yet so far as the dominant world of any material unit is the rest of the cosmos as an aggregate of material units influential to a degree somewhat proportionate to the distances they are from it, the discrepancy in the behavior of one material unit and another must, particularly when they are close to one another and thus subject to about the same environmental conditions, be almost negligible. The possibility of such discrepancy is excluded entirely, however, when indivisibles have their boundaries possessed by monotonously behaving supervening individuals. Only when they are completely possessed by

⁷⁵ Cf. *Dialogues Concerning Two New Sciences*, tr. Henry Crew and Alfonso de Salvio, New York: The Macmillan Co., 1914, especially pp. 90, 137.

⁷⁶ Cf. Paul Weiss, "Being, Essence, and Existence", this *Review*, I, p. 74.

monotonous supervening individuals and function as mere units do material entities persistently follow out the pattern of a fixed law of matter without deviation." ⁷⁷

IV. THE FIVE PROPOSITIONS

Having examined the real and apparent causes (noting the former to be either environmental prompters, or component parts — real or analytical, and the latter to be "efficient"

⁷⁷ *Reality*, pp. 260-1. Cf. Whitehead, *Science and The Modern World*, p. 162. "Accordingly, the characteristic laws of inorganic matter are mainly the statistical averages resulting from confused aggregates. So far are they from throwing light on the ultimate nature of things, that they blur and obliterate the individual characters of the individual organisms."

This view has much in common with that expressed by Schopenhauer when he writes of a law that "It affords us absolutely no information about the inner nature of any one of these phenomena : this is called a *force of nature*, and it lies outside the province of causal explanation, which calls the constant uniformity with which manifestations of such a force appear wherever their known conditions are present, a *law of nature*. But this law of nature, these conditions, and this appearance in a particular place at a particular time, are all that it knows or ever can know. The force itself which manifests itself, the inner nature of the phenomena which appear in accordance with these laws, remains always a secret to it, something entirely strange and unknown in the case of the simplest as well as of the most complex phenomena." *Op. cit.*, II, ii, 24. Our view differs from Schopenhauer's however in providing an explanation of their real validity. For Schopenhauer, as for Kant, the world of matter, while dependent on the world of free transcendent beings, is fixed and determined, so that man is, as it were, bifurcated. The point of our analysis is not only that the public world could not be if there were not private beings, but that since the being which is private is the same being which is public, its public activity, until it is past, is not absolutely determined.

Man is not, as it would appear from Schopenhauer's description, private and public, but private-public. It is true that the main intent of Schopenhauer's philosophy is to show that there is real relevance between will and idea, and to deny the Kantian *ding-an-sich*. But in this case he failed to transcend the limitations of his age, and like Hegel strove to reconcile creativity with the apparent demands of physics for absolute mechanism (For a brilliant study of this point in connection with Hegel, cf. Collingwood, *The Idea of Nature*, pp. 121-132). We are more fortunate in our time, since recent developments in physics have made it unnecessary for us to risk the fury of the idol worshippers when we deny to the laws of matter more than a statistical exemplification.

causes), we can see how our view satisfies the four basic propositions set out and discussed before. It explains the first proposition by defining events as pulsations of substantial beings and the second by showing the necessary temporality of such beings. It explains the third and fourth by an ontological account of the nature of beings and their interactions, guaranteeing the validity of the third by the account of causes as real components of their effects. The characters of an event *A* which are correlated with those of its successor *B* are those which express the fact that whatever the character of *B* may be it must have *A* as an analytic derivate in some manner. Thus the statue which is to be made of marble, and the water which is to be made of oxygen and hydrogen, although products of a creative activity and not reducible to their components, still must have some relation to them. The existence of marble today implies at the very least that tomorrow will have the character that it has partly because of what that marble now is. The ontological objection to the doctrine of causality is avoided by the substitution of the doctrines of mellontological prompting and of the constitution of the complex entity, for that of efficient causes.

We are now in a position to set out the fifth proposition which is needed to complete the account of causality :

Proposition V'. Any event A is a pulsation expressing the attempt of substantial beings to complete themselves. The detailed nature of the event B which follows A cannot be known prior to its occurrence. But inasmuch as beings pulsate in the effort to assimilate other persisting beings, the event B which follows the event A must be a pulsation of substantial beings, part of whose nature is a constant, and therefore knowable prior to a given pulsation. There must therefore be at least one characteristic K, ingredient in A, that is correlated with another characteristic L ingredient in B.

This proposition, like the other four, has its warrant in the theory of mellontological causation, grounded in the vectorial theory of the individual which embodies the principle of transcendence-immanence.

The theory of mellontological causation explains at once why beings are determined and why they are free. We have

examined the ways in which they are determined. We must still examine the ways in which they are free.

V. THE FREEDOM OF BEINGS

All beings are vectoral in character, at once transcendent and immanent, free and determined. It is not that there are compartments within a being that are free, and compartments that are determined. It is that a being as transcendent-immanent is at once free and determined, because the very meaning of Freedom is that it is the essence of an individual necessarily dependent upon other individuals. To be an item in a public world a being must be something for itself, something private.

As transcendent, private, and actual, an individual is a substantial being with power. In order to modify, or be modified, it must have power; and this power must issue from it. For a power external to it can only modify it if it is there to be modified. A dead man is neither pained nor pleased, active nor inactive. Nothing can be done to him as a living being, precisely because he can do nothing.⁷⁸ This apparent paradox is at the heart of any solution of the problem of freedom. To be conditioned is strangely, to be free; for to be conditioned, it is necessary to be; but if the being of that which was conditioned were conditional upon that which conditioned it, it could not be until it was conditioned. But we have said, it could not be conditioned without first being something to be conditioned. We must therefore admit that a conditioned being is not dependent for its being upon what conditions it, and is free as the transcendent ground of the possibility of its conditioning.⁷⁹ Regard-

⁷⁸ Cf. Hegel's profound study of "Lord and Bondsman" in his *Phenomenology of Mind*, pp. 228-40.

⁷⁹ Or in Dr. Weiss' language in *Nature and Man*, it is a being capable of making the indeterminate determinate. See p. 19. Cf. Schopenhauer's comment on Spinoza: "Spinoza (Epistle 62) says that if a stone which has been projected through the air had consciousness, it would believe that it was moving of its own will. I add to this only that the stone would be right. The impulse given to it is what the motive is for me, and what in the case of the stone appears as cohesion, gravitation, rigidity, is in its inner nature the same as that which I recognize in myself as will, and what the stone also, if knowledge were given to it, would recognize as will." *The World as Will and Idea*, II, ii, 24.

less of whether a being may choose this or that, or only this, we must recognize that the possibility of action can only be grounded in the nature of the acting being. However much a man may be used as a tool, he must still, in order to be a tool, stand over against the user as something other than that user, with potencies grounded in his own nature. To be nothing but the object of influence is to be nothing to be influenced. The wave beating on the shore does not erode triangularity or the idea of God, because, being ideas, they are without substantial power. And this power can properly be called Freedom; for the free is that whose being is underived. Freedom is the essence of all beings, for it is identical with that power which is the essence of substantial individuality.⁸⁰ For beings are influenced and determined; and to be influenced and determined is to be a something, and to be a something is to be free. The ancient distinction between the free and the bound is seen to be nonsense if freedom and bondage are taken as independent absolutes. To be, is at once to be free and to be bound, to be actual and potential. As public and immanent, a being is wholly determined. For what it is, as public, is the result of a pulsative act, an act which can only have that result which it actually does have.⁸¹ The past, which now lacks substantiality and is only public and outward, is a fully determinate realm, in which every act can be regarded as the outcome of the constituents which make it up. There is neither possibility nor unexpended effort in it. To write books about what history might have been like is to imagine the past as actually present and still indeterminate. But in effect it is not present, is not actual, and substantial; it is a purely public realm, and being public, fully determinate.

As transcendent, a being is free; as immanent, fully determined. The acts in which it engages have also their private and public aspects; each of these is part free and part determined.

An act of pulsation in which a being engages is both an act of self-expression and a prompted act. As an act of self-expression it issues out of (a) the character of the acting being and (b) out of its decisions.

⁸⁰ Cf. my article above cited.

⁸¹ Cf. Weiss, *op. cit.*, p. 10.

a. The character of a being is what that being is as valuationally ordering its environing universe, and depends at once upon the being and its environment. It depends upon the being as the source of the perspective which orders its environment and as the beneficiary of any act which enhances it; but on the other hand it depends on its environment for the reality which it must accrete to become perfect. Since a being strives to be perfect, and since perfection involves the assimilation of all of reality, its intrinsic perfection depends upon what is now real and other than it. Inasmuch as it is an act of self-expression it is an act issuing entirely from within the acting being. But the acting being is itself defined as that which needs others; so that, so to speak, what issues from its very bowels is infected with the being of others.

b. The decisions of a being are made in the course of every act of pulsation, and determine whether the being is going to take the line of least resistance, or attempt to assert itself regardless of the pressures to which it is subject.⁸² Inasmuch as, although the pressures are not exclusively of its making, the decisions as to whether or not to resist them are its and its alone, a being is completely free so far as it is decisive. It might be of terminological value thus to distinguish as species of the generic freedom, specific freedom (grounded in the underived nature of the being) and *spontaneity* (grounded in the decisive nature of the being).

An act is not only an act of self-expression, it is also a prompted act. As prompted it is the result of an interaction between itself as striving to make the pertinent part of itself, and environing beings attempting to dominate it. It is therefore in this sense also partly free and partly determined. To the extent that the prompted being succeeds in making the pertinent part of itself, it is free; to the extent that it must give up the pertinent because of the pressure of its environment, it is determined. We can see now in what senses beings are subject to inner and outer bondage. As inward a being is always free so long as it exists; for in order to exist, affect, and be affected by others, it must be something. As outward, a being is always

⁸² Cf. above pp. 80-85.

determined so long as it exists; for it is necessarily what it is. When it acts, it acts because it must express itself and because others press upon it. So far as its aim depends upon itself, its act is free; so far as its aim depends upon the existence of other determinate beings limiting it, its act is determined; so far as it decides whether to insist upon its aim, its act is spontaneous; so far as the aim is actually realized, its act is outwardly free; so far as it fails to be realized, it is outwardly determined. All beings are thus generically free in three ways, only the third of which admits of degrees. A being is specifically free because it is what it is, and because nothing could force it (as transcendent) to be what it is. A being is spontaneous, because it expresses itself in decisions which, though motivated partly by its environment, are absolutely self-constituted, and could be constituted by nothing else. A being is (more or less) free in its acts, always imposing itself to some extent upon its environment.

Eli KARLIN

Mount Kisco, N.Y.



A NOTE ON ARISTOTLE'S DISCUSSION OF GOD AND THE WORLD

Aristotle was probably the first to make God wholly and unambiguously independent of the world. His doctrine that actuality is always prior to potentiality¹ seems to lead² necessarily to the conclusion that there is an unchanging existent who is complete act, — namely, God.³ Such a being makes every possible difference to the world, for there is no change apart from him. At the same time, there is no reciprocity: the world is irrelevant to the deity, for he is unmoved. In short, God's relation to the world is external to him and internal to the world. As such, it belongs to the class of unilaterally external relations previously distinguished by Aristotle.

It will be recalled that Aristotle cites two examples of relations of this type: relations of knowledge and of vision, both of which are internal to the knower and seer, but external to the objects seen and known.⁴ However, neither of these relations can be the ones which exist between God and world for they are in a sense cul-de-sacs. Action is involved in their establishment, but they do not necessarily lead to further action, and so they cannot account for the eternal movement of the universe. Only when their objects become desiderata do they result in additional activity.⁵

It must therefore be as an object of desire⁶ that God moves the universe. There is no other way in which he could remain immutable and at the same time elicit constant motion. The

¹ "What is potentially comes to be actually by the agency of something that already is actually." *Metaphysics* 1049 b24.

² We shall later find good reason to doubt that the Aristotelian version of this doctrine actually does lead to this conclusion of Aristotle's.

³ *Metaphysics* 1072 a24; *Physics* 258 b10 ff.

⁴ *Metaphysics* 1021 a27-b1.

⁵ "But desire is consequent on opinion, rather than opinion on desire." (*Metaphysics* 1072 a28.)

⁶ "The final cause produces motion as being loved, but all other things by being moved." *Metaphysics* 1072 b3-4. With one possible exception noted later, it will be assumed in our discussion that this defines the only relationship existing between the God of Aristotle and the world. The metaphors in *Metaphysics*, Lambda, Ch. 10, where God is compared to the

status of being desired, like that of being known, need have no implications for the real character of whatever it is that is desired, although, at the same time, the object of desire is the occasion of greater activity than the object of knowledge only.

If this account of the relationship of a wholly independent God to a partially dependent world is to be tenable, amplification is needed. In reference to the desirer, it must be shown that it (that is, the world in whole or part) possesses an efficiency enabling it to pursue an object in case it should want to do so, and also, that it does want to do so (or, at the very least, that it is capable of the appropriate desire). Furthermore, as Aristotle maintains that the unseen can be known only through the seen, consistency demands that God be given no attributes other than those implied by relationships to the observable. We must therefore watch for gratuitous characterizations of the divine.

In his few notes on theology, Aristotle does not develop the above points. We ourselves, therefore, must attempt to find principles in the rest of his philosophy which can fill these lacunae.

First, then, what is the efficient agency which enables the world to pursue its supernal end? It is certainly not God, for he moves only by being the end itself.⁷ To be sure, the end

general of an army and also, by implication, to a paterfamilias, must be disregarded: first because there is no evidence that Aristotle used them to assert a divine directive providence (rather, the chief point of comparison seems to be the common unilateral dependence of two kinds of order on their radically different ordering principles); second, even if Aristotle is here suggesting something different, he gives us no clue to what it is he has in mind, so any discussion of it must be only hypothetical.

⁷ Passages in which transeunt activity seems to be excluded from God are *De Caelo* 292 a23, "... it is natural that the best conditioned of all things should possess its good without action"; *ibid.* 292 b5, "... the perfectly conditioned has no need of action since it is itself the end"; *E.N.* 1178 b8-25 should also be noted. F. X. Meehan (in *Efficient Causality in Aristotle and St. Thomas*. Washington: Catholic University Press, 1940, p. 93) makes much of the fact that phrase is "need not act" rather than "cannot act". He argues from this that Aristotle was implying a theory of divine self-sufficient self-giving. However, it seems safer to assume that Aristotle intended what his contemporaries would understand him to say, and it is unlikely that Meehan's interpretation would have occurred to anyone before the growth of scholasticism.

of action, even in its exclusively final character, is in a sense efficient: i.e., it starts action as well as being the end aimed at. But there must be a source of action in the pursuer of the end, or it could not pursue. It is this with which we are concerned. This source of action apparently has its locus in the heavenly spheres. They are activated by their love of God, and through their eternal circular motions, they produce the kaleidoscopic character of the universe.⁸ Obviously the presence of desire in the spheres presupposes that they have souls, as Aristotle admits when he says that they are animate.⁹ It is in these souls that the source of mundane motion is to be found.

This efficiency of souls would be mysterious if it were peculiar to them — if it were a principle invented *ad hoc*. But there is reason to believe that it is an extension of a character possessed by all entities. There are grounds for arguing that it is a mistake to think of Aristotelian potentiality as mere passivity which must get all the energy with which it acts from without. It seems better to describe it as unreleased energy which for activation needs only the 'triggering' involved in the availability of a suitably structured outlet (e.g., in generation and organic growth, a substantial form). This view seems to have been so basic a presupposition of Aristotle's that he never thought of explicitly developing it. In support of this may be cited the fact that he never asks how things can have a resistent character and maintain themselves in existence. Properly defined, then, potency may well be the ability to persist and also to change oneself when properly incited. This power is so very nearly active that at times it seems almost to be straining at the leash. Indeed, Aristotle admits that on occasion it does not wait for proper incitement — it acts without being acted upon. He says, "... some matter is such as to be set in motion by itself".¹⁰

If this view of potentiality is correct, there is no fundamental difficulty for Aristotle in supposing that nature is cap-

⁸ For the derivation of all change from the celestial motions see *Metaphysics* 1072 a9-18, 1073 a12.

⁹ *De Cælo* 285 a29, 292 a20.

¹⁰ *Metaphysics* 1034 a12.

able of the self-movement implied by its desire for God. The priority of act does not mean that all the 'force' expressing itself in activity is derived from prior actuality, but rather that there would be no response if there were no stimulus. The peculiarity of soul is that it can be stimulated without immediate contact, and so may respond to the immaterial and immutable. And so, its efficiency, which was the initial problem, needs no special explanation.

We now turn to a consideration of the ability of the spheres to have a desire for God inducing them to indulge in eternal rotation. Desire "is just appetition for what is pleasant"¹¹, namely, for "unimpeded activities."¹² It is one's own functioning that is desired (everything desires its own end, not that of another¹³), and other things are longed for only in so far as they contribute to it. But in what sense can God be said to contribute to the operations of the spheres? His activity, being wholly self-contained, has no contact with theirs which would enable them to adjust or assimilate themselves to it.

Consequently, it cannot be literally true that the spheres desire God. Aristotle does not explicitly say this, but his psychology would seem to indicate that the *only* way in which they can long for God is by desiring for themselves a life of complete actuality such as He enjoys. Their desire is to approximate that divine life as nearly as their natures allow.¹⁴

¹¹ *De Anima* 414 b3.

¹² *E.N.* 1153 b10.

¹³ For this reason 'good' has many meanings, for different things have different ends, and so is one only analogically. (*E.N.* 1096 a23-29.)

¹⁴ See *De Anima* 433 a28: "To produce movement the object must be... good that can be brought into being by action, and only what can be otherwise than as it is can thus be brought into being." Obviously, therefore, God cannot be the good of the spheres, for he cannot change. Their good must be a particular quality of life as much like the divine as possible.

This raises a serious problem regarding the nature of the God which is desired. Is he merely a 'quality of life'? However, consideration of this must be deferred until we discuss the sort of being which can be the object of the spheres' desire. At the moment we are concerned with the possibility of a desire which produces ceaseless revolution.

This brings us to an apparent contradiction in the argument. Divine activity consists of eternal self-contemplation.¹⁵ But instead of attempting to simulate this, the spheres try to approximate pure act by the ceaseless and unchanging motion of describing circles. *A priori*, it would seem that a kind of 'circular' contemplation in which the mind sweeps regularly over a given cycle of ideas would have been nearer to the divine.

Such a view was unacceptable to Aristotle because his science convinced him that "all other changes are posterior to change of place."¹⁶ Alteration results from the rearrangement of the material elements and this involves shifts in position.¹⁷ Therefore, the first motion must be locomotion.

Indeed, without locomotion the sort of changes involved in the regularly 'cyclical' discursive thinking above suggested would be impossible. Intellectual activity *per se* is divine even in humans,¹⁸ so the reason for the veering and stopping of our thoughts must be found, not in the intellect itself, but in anterior physical interference.¹⁹

So far, then, Aristotle is consistent. We have seen that his system contains principles which explain how desire can produce the primary circular movements of the spheres. To be sure, he becomes entangled in a mesh of contradictions when he tries to apply these metaphysical principles to the astronomy of his day,²⁰ but considered apart from these scientific entangle-

¹⁵ *Metaphysics* 1072 b18.19 & 1074 b5-11; *E.N.* 1178 b22.

¹⁶ *Metaphysics* 1073 a12.

¹⁷ *Physics* 260 a27—261 a28.

¹⁸ See the description of the agent intellect in *De Anima* 430 a14-25.

¹⁹ See *E.N.* 1178 b33 ff. where Aristotle describes the physical conditions necessary for the contemplative life.

²⁰ It is not difficult to show that this astronomical venture did result in contradictions. First of all, fifty-five celestial motions were distinguished. That of the 'first heaven' is much stronger than the others for it sweeps along the great majority of the stars, while several of the others must combine in order to move one (planet). (*De Cœlo* 288 a15-30, etc.) How account for its superiority? Apparently Aristotle first held that it was the result of its closeness to God (*Physics* 267 b22) and the imperfections of the lower celestial bodies (*De Cœlo* 292 b19-26). But place does not exist outside the first heavens (*De Cœlo* 279 a15-20), and God lacks magnitude (*Metaphysics* 1073 a5-10) so cannot be closer to one sphere than another; nor can the heavenly bodies be different in perfection, for

ments, his position on this point can be made intelligible in terms of the rest of his philosophy.

We turn now to our third problem. What kind of a being is a suitable object for the desire which moves the spheres? The answer has already been indicated. It would seem that the directly desired good cannot be wholly isolated, for such good must be in some measure attainable. Therefore that which activates the heavens is desire for the best life they can achieve.²¹

What need, then, is there for God? His activity is the best conceivable life, and therefore he is the standard by which the goodness of any action is determined. But this means that from the point of view of the world God functions as an abstract criterea — a something which, because unobtainable, can be no more than an ideal to appetitive beings.

And so we are confronted with our fourth question: Is the attribution of substantiality to God gratuitous? It would seem that it is. God's actual existence cannot be inferred from the desire which the world has towards him. Furthermore, as we have seen, He has no relation of transeunt efficiency to nature; and as it appears that there is no other relationship which He

they all are composed of the same eternal sensible matter. Therefore Aristotle developed a second theory (Jaeger, p. 379) which accounted for the differences in rates, axes and strength of the secondary motions by positing fifty-five different unmoved movers.

However, all these specifically identical unmoved movers proved an embarrassment. It would seem that there must be a supreme one, for otherwise the unity of the universe would be fractured (*Metaphysics* 1074 a36). But they were all the same in definition, and so none could be subordinate. Furthermore, there cannot be a multiplicity of unmoved movers for, being immaterial, specific unity means numerical identity. (All numerically different things must have matter (1074 a34), but the unmoved movers have none of a sensible sort (1073 a38) and the only non-sensible matter which Aristotle mentions — viz., intelligible — is present in things only *qua* sensible (1036 a11 ff.). Nor could Aristotle follow the scholastic route of distinguishing between God and inferior immaterial beings by saying that the essence of the latter are in potentiality to their existence, for his unmoved movers are all by nature eternal (i.e., in scholastic terms, their essence and existence are identical). Therefore, despite Ross', contention (*Metaphysics and Commentary*, I, cxi), the problem of how there could be many unmoved movers is not resolvable on the basis of Aristotle's principles.

²¹ *Supra* p. 102.

has to the world, there is no basis which would justify Aristotle in describing Him as the fullness of being.²²

If this is true, any valid reasons which Aristotle may have had for assigning actuality to God would have to be inherent in the idea of a divine being. It is perhaps not impossible that he was motivated by a kind of anticipatory feeling for some form of the ontological argument, or he may have supposed with Descartes that the idea of God requires a transcendent cause; but in the absence of any hints of this in his writings, it would be idle to speculate on the matter. We must therefore conclude that on Aristotle's grounds it is superfluous to assign existence to God.

But may it not be equally inconsistent to refuse it to Him? Does not Aristotle's God then become a sort of Platonic Idea with the result that the whole polemic against separable forms collapses?

Not necessarily. For Aristotle, the concept of God seems to have been the universal of actuality *per se*, considered in abstraction from the composites it infuses. As such, there is no more reason to consider it a separable form than there is for assigning such a status to ordinary generic and specific concepts such as 'animality' and 'manness', or to a transcendental such as 'unity.'²³

²² The passage on the agent intellect in *De Anima* III, 5 has been used as an argument for the existence of God. But this can be done only if one asserts with Alexander, Zaberella, Avicenna, Averroes and others that the agent intellect is numerically one in all men (which implies that God has all our knowledge first and imparts it to us by actualizing the forms we receive into the passive intellect). This interpretation is perfectly compatible with (though not necessitated by) the passage in the *De Anima* (Ross, *Aristotle*, p. 152.3), but cannot be reconciled with the representation of God as acting only in knowing himself (*Metaphysics*, Lambda, Chs. 7 and 9). It would seem that the less explicit passage should be interpreted in the light of the more explicit one, so we shall disregard the *De Anima* passage as indicating anything about Aristotle's own reasons for positing an existent God.

²³ This comparison assumes that the notion of act is a universal of the same type as concepts which refer to forms instead of existence. This disregards the Thomistic distinction between *abstractio totalis* (abstraction of the universal from the particular) and *abstractio formalis* (abstraction of the actual from the material). According to this distinction, universals *per se* have no separate existence, but the actuality which

Viewed in this way, the references to the immanence of God become quite comprehensible.²⁴ If the idea of pure act (God) is derived by abstraction from nature as a whole, then the divine, the standard for measuring the goodness of actions, is found in everything. In the contrast between impeded and unimpeded action we find him as the possibility of freedom from clogging potencies, the ideal of immutability in the sense of action infinitely swift and completely comprehensive.²⁵ It is the desire for this divine, unhampered operation which moves the spheres. Aristotle says: "All pursue pleasure... and perhaps they actually pursue not the pleasure they think they pursue nor that which they would say they pursue, but the same pleasure; for all things have by nature something divine in them."²⁶

God, then, may be viewed as the final cause of everything, and thus the orderer of the world. However, he is not the final cause in the sense of formal end, but rather is that which makes forms desirable: viz., the freedom of action which is a concomitant of the full actualization of form.

This does not mean that the substantiality of God is positively excluded by Aristotle's position. It is perhaps quite possible that there is an existent complete act. However, the actuality of such a being is not necessary to the Aristotelian world, and so there are really no adequate grounds for asserting it, even though Aristotle thought otherwise.

We may conclude, therefore, that Aristotle's success in keeping God wholly independent of a world intimately related to him is delusory. He failed to provide solid reasons for supposing that God is more than an ideal possibility.

GEORGE A. LINDBECK

Danbury, Conn.

manifests itself on lower levels does have independent, increasingly immaterial existence all the way up to God. This may be a legitimate development of the Aristotelian position (though it seems to have a Plotinian flavor) and, if valid, would suggest answers to several of the problems raised here. However, I do not find this doctrine in Aristotle himself.

²⁴ In *Metaphysics*, Lambda, Ch. 10, the "highest good is spoken of (perhaps metaphorically) as "probably" both immanent and transcendent."

²⁵ For this way of viewing the immutability see W. M. Sheldon, "Can Philosophers Cooperate", in *The Modern Schoolman*, March, 1944, p. 134.

²⁶ *E.N.* 1153 b30-33.

THE MEANING OF HUMAN HISTORY

by Morris R. Cohen (The Paul Carus Lectures.
Sixth Series, 1944): Open Court Publishing Co.,
LaSalle, Illinois, 1947. pp. 304. \$4.00

This book, like all of Morris R. Cohen's work, is characterized by its sincerity, its astute and judicious criticism, and by the breadth of its horizon. In it Cohen drew together all that he had previously had to say concerning historical knowledge, the nature of historical causation, and the elements of meaning in history.¹ To these earlier interpretations he added new insights. The resulting work, written under difficulties at the close of Cohen's fruitful life, stands as testimony to the passion of his disinterested pursuit of clarification and truth.

The aspect of *The Meaning of Human History* which is likely to be of greatest interest to readers of this journal is also that in which Cohen went farthest beyond his previous analyses. Running through the present work, expressing itself in variant forms in varied contexts, is Cohen's insistence that in the historical process discreteness and continuity are equally real and equally significant. This thesis is not, of course, new; nor does it come as a surprise to anyone familiar with Cohen's other work. However, it is important to see how he deals with history on this basis, since all philosophies of history, whatever their orientation, must ultimately face the issue of the sense in which the historical process is both continuous and discontinuous, and must seek to determine the relations of historical parts to historical wholes.

I

For Cohen "the subject matter of history [is] not an atomic series of momentary events (unrelated to each other

¹ Cf. *Reason and Nature* (1931), pp. 333-385; Cohen and Nagel: *Introduction to Logic and Scientific Method* (1934), pp. 323-347. *Generalization in the Social Sciences* (in L. Wirth: *Eleven Twenty-six: A Decade of Social Science Research* (1940)). *Causation and its Application to History* (included, in large part, in chapters 3 and 4 of the present work). *Journal of History of Ideas* (1942), v. III, pp. 12-29.

except by fortuitous succession) but rather a continuous existence" (p. 7). He states that "the human life in which the historian is interested is more than a number of disconnected facts" (p. 23). However, this does not lead him to hold that the specific events of history are wholly merged in the flow of a single process (cf. pp. 29f., 47, 66, 228): for Cohen 'the real Julius Caesar' is not Bradley's. How, then, are we to conceive of the relationship between the continuing process and the specific events which are, in some sense, the elements which make it what it is?

Cohen never attacks this metaphysical problem directly, but approaches it in what has become the customary manner, through a consideration of "the task of the historian" (Ch. I). Even the second chapter, entitled "Metaphysics and History", raises and attempts to solve the issue within the context of a discussion of our knowledge of history. In this context the issue is the traditional one of the relation of historical 'facts' to 'historical synthesis'. Since every historical synthesis is an interpretation of the facts, the crucial problem is what governs, or ought to govern, interpretation.

While Cohen recognizes that the historian's interpretation depends upon his perspective, and contends that "perspectives are relative to values" (p. 26), he holds that this does not entail that "the process of selection need . . . be entirely subjective" (p. 28). For him "the relativism of historiography is not identical with subjectivism" (p. 46). This contention is not based upon the view that the values which determine the historian's perspective are timeless entities (Rickert's position); in fact, in these passages Cohen seems to accept the thesis that the values in question are wholly conditioned by cultural and personal factors (p. 26; p. 28). Instead, his defense of objectivity ultimately rests upon the thesis that selection does not involve falsification: as he says, "the notion that abstraction or selection involves falsification draws its plausibility from the supposed unreality of abstractions" (p. 46). It is therefore essential to see precisely how Cohen conceives of the relation between abstraction and a knowledge of the historical process. Unfortunately, while he frequently reverts to this problem, Cohen never deals with it systematically and in detail. However, it is

not difficult to show on the basis of several scattered passages what view he actually holds.

In dealing with the traditional distinction between history and science (history dealing with individual occurrences, science aiming at the discovery of laws), Cohen states that "history in trying to establish the occurrence of individual events on the basis of evidence must assume causal laws according to which the phenomena of human life are connected" (p. 37). This leads him to make the important suggestion that history is in fact to be classed as "applied science" (p. 38), for it consists in the application of general, abstract laws to concrete, individual occurrences in order that we may comprehend their specific nature and discover their connections with other events. Without this element of abstraction the individual occurrences would be unintelligible and indescribable: it is only because we can abstract that we can comprehend. Now, that which we abstract, and formulate in laws, are "universal relationships between repeatable elements" (p. 36), and these we verify in showing their applicability to the individual events. If it be asked how we first reach such abstractions, Cohen's answer appears to be that in the "natural history" stage of knowledge facts are already classified according to categories such as time and place, nationality, government, etc. (p. 65), and that as investigation proceeds these categories are refined until "proper categories are found such that many facts can be deduced or formed into a system" (p. 68). At that point we are in possession of abstractions capable of rendering the facts of history intelligible: the stage of history as applied science has been reached.

Assuming that I have interpreted Cohen correctly on this point, the question arises as to whether or not it is in fact true that laws which state universal relationships between repeatable elements do emerge out of those classificatory categories which are essential to the description of an event. If it be true (as I am inclined to think is the case) it is an important truth. And while Cohen does not attempt to establish it in detail, his discussion of the nature of historical causation (Ch. 4: "The Linkage of Human Events") may be interpreted as a defence of this position. There he states the general principle that

"The problem of causation is . . . merely an aspect of the wider problem of individuation" (p. 108), a principle which must, I think, be accepted by all who agree that "a scientific explanation is after all only a certain kind of description, a description in which the phenomenon is related to other phenomena in accordance with certain laws . . . When [for example] we explain the phenomenon of the rainbow we merely describe it in such a way as to analyze those elements which relate it to other elements elsewhere" (p. 99). Thus, for Cohen description and explanation are not discrete activities; on the levels of "natural history" and of "science" they interpenetrate.

This conclusion is important for the theory of historiography. For it will be remembered that Cohen started from the traditional problem of the relation between the historian's facts and the synthesis of these facts which he ultimately achieves. We now learn that a description of these facts is not one activity, an explanation of them another; that at every stage of historical enquiry what is present is explanatory-descriptions which are either more or less adequate to what they purport to comprehend.

But if it be objected that such a view undermines the last and only truth which a historian can attain — fidelity to brute fact — Cohen would reply that the elements of abstraction which are involved in these explanatory descriptions are not to be discounted as unreal: historical reality is neither a "seamless web" nor "a series of atomic occurrences"; it is "a living stream" (p. 107) which contains "objective underlying patterns" (p. 66), and it is these objective patterns which our abstractions enable us to grasp.

It should now be apparent how Cohen can accept the doctrine of historical perspectives and yet hold that historical knowledge is not subjective. It is his contention that the historian's perspective enables him to grasp certain of these objective patterns, even though it does not permit him to grasp all of them (cf. pp. 46-48). Only a complete historical monism would deny this, and of such monisms Cohen says: "It is important to get rid of the hasty and facile dogma that everything is relevant to everything else. For purposes of history as for any other field of research this dogma is entirely futile" (p. 29).

When the historian adopts (for whatever reason) a certain perspective, what he discovers is not to be thought of as determined by that perspective; rather, the actual connections among events is what guides and controls his findings. As Cohen says at one point: "in each perspective the relation [between events] is determinate" (p. 97). Here his metaphysical pluralism and his defence of the objectivity of historical knowledge go hand in hand (cf. pp. 33; 107).

However, there are passages which, while not inconsistent with the above interpretation, suggest a somewhat different view. For example, Cohen says: "There are many ways of dividing a pie, no one of which can claim exclusive validity. So too there are many ways of dividing the surface of the earth or the course of the seasons. The choice among rival lines of division is an essential part of the process of rational inquiry. But once such choice has been made it is the nature of the pie or the universe that determines the content of each part or division" (p. 67f.). If one were to attach weight to this simile one might contend that just as it is one's purpose which governs how one divides the pie or the earth's surface or the seasons, there being nothing in these objects themselves which forces us to accept or reject any of a large number of alternative divisions, so the historical process imposes relatively few limitations upon how we choose to divide it. Political interpretations, economic interpretations, etc., would then be dictated by our purposes, not by the process itself. And while it might be held (as Cohen holds) that all of these interpretations bear some relation to the objective entity which they purport to describe, it would remain a question as to whether we can discover the nature of that entity, since we ourselves must see it from our own point of view.²

² Cf. the difficulty in Cohen's comparison of histories and photographs of a mountain. If we wish to prove not merely the "objectivity" of the *mountain*, but the objectivity of our *knowledge* of it, we must show that our photographs, taken from different perspectives, fit together. Can we similarly show that our perspectival histories fit together? (Cf. Cohen's minor admission of the fallibility of our perspectival knowledge of history, p. 74.)

I do not believe that Cohen was willing to accept the view which such passages might suggest. It appears to me that they may best be accounted for by a failure to draw a sufficiently sharp distinction between the influence of valuational and of non-valuational factors upon our perspectives. When Cohen speaks of the influence of "occupational, national, religious, or personal factors" upon our historical perspectives (p. 26), he is referring to what are, in a narrow sense, valuational factors. But when he speaks of the historian's discrimination of those events which are *important* in a specific context and says that "the category of importance is one of valuation" (p. 80; cf. pp. 66; 226), he is then using the term valuation in a quite different sense. He is apparently willing to refer to the first type of influence as a case of "bias" (p. 80; cf. p. 20 and p. 26), but it is his reiterated contention that what is important, or relevant, in a given context is determined by the constitution of the object, and not by the selection which we make (cf. p. 70f., and pp. 48, 52, 66, 67f., 96f., etc.). Our selection of what is important or unimportant, relevant or irrelevant, ultimately depends upon the state of our knowledge and the ideas of historical causation which we hold. And in all but one passage (p. 114),³ Cohen consistently holds these intellectual factors are *not* directly ascribable to the partiality and bias which spring from "occupational, national, religious, or personal factors." As he points out (e.g., p. 28 and p. 48), the fact that natural scientific knowledge is relative to existing evidence and prevailing hypotheses does not lead us to hold that such knowledge is subjective; so, too, the fact that our historical perspectives are relative to existing evidence and prevailing theories should not lead us to deny historical objectivity.

It appears to me, however, that Cohen can only uphold this last contention if it is permissible to distinguish clearly between the influence of cognitive and valuational factors, which, as I have pointed out, he has failed to do. And the reason, I suspect, why Cohen and others do not draw this distinction lies in the fact that valuational factors (in the narrower sense)

³ One further passage (p. 226) is, I believe, ambiguous. It perhaps states the same view.

undoubtedly often do influence historical writing. However, that they have this influence does not imply that they *ought* to have it. On the other hand, we may say that a historian *ought* to be influenced by the evidence available to him and by hypotheses which appear to him to be adequate. Even if the evidence should later turn out to be spurious, and the hypotheses ill-founded, we approve and do not condemn the full use of what appeared to be adequate evidence and reasonable hypotheses. Thus, later knowledge may reveal inadequacies or falsifications which resulted from the limited perspective of a given historian, but the acceptance of one among alternative perspectives is not then a matter of values or of choice; it is a question of evidence and inquiry.

It appears to me that it is only on the basis of some such separation between valid and invalid determinants of perspectives that Cohen's defense of historical objectivity may be maintained. And it is, I think, regrettable that Cohen, who was never averse to distinguishing between normative and factual issues (cf. Ch. 10 : "The Tragic View of History"), did not see fit to distinguish between what historians most frequently do and what the norm of historical interpretation is.

II

Chapters 5 to 10, constituting a little more than half the book, deal with variant interpretations of the historical process. Cohen's treatment of geographic and of biologic elements in history, and his discussion of the part which great men play in history, are, on the whole, cautious and well-balanced. No strikingly new theses emerge : Cohen's rôle is that of adjudicator. And since in these passages he consistently holds to the pluralism which in the earlier chapters he had developed, his definition of the historical process as essentially social (p. 45) does not entail that he should minimize or neglect geographic, biologic or personal factors in history.⁴

⁴ His acceptance of the concept of emergence is a natural part of his pluralism, and is relevant in this context. (Cf. pp. 45, 90f., 118, 136, and 139f. Also, his treatment of this problem in *Reason and Nature*, p. 335.)

What appears to me to be a relative weakness in this section is Cohen's failure to deal directly with the problem of whether or not there are causal laws which describe the relations between social institutions in given cultures, in given types of cultures, or in all cultures. Remembering Cohen's views regarding causation, and the necessity for causal hypotheses in the description of events, one would expect him to deal with the problem of what are "the universal relationships between repeatable elements" in a constructive chapter entitled "The Institutional Approach to History". Instead, we find a merely general defense of "the multidimensionality of history" (section 1) and a discussion of the city, division of labor, the social contract, and science as "the institutions of society" (section 2). A discussion of the rôle of economic institutions in a society is conspicuously absent⁵, although the so-called economic interpretation of history is perhaps the most serious single attempt to discover an underlying pattern of universal relationships within the historical process. In defence of Cohen's neglect of such general hypotheses regarding the interrelationships among various types of social institutions, one might aver that the multidimensionality of history — the thesis that there is no one type of factor which is both necessary and *sufficient* to explain concrete historical data (cf. p. 226) — precludes the existence of any laws of this type. But this is surely not the case. On the basis of a pluralism such as Cohen's, one could easily contend that there may be such laws, even though they are not sufficient to serve as premises from which we could infer the actual nature of historical institutions at any given time. For is the situation not analogous with events in nature, where (as Cohen insists) it is not the absence of law, but the fact of contingency, which makes it impossible to deduce in advance the actual nature of any complex event (cf. pp. 109ff.)? But Cohen believes and states (p. 116) that the complexity of historical events makes the belief that we shall discover such laws highly implausible. To this three replies may be made. First, it is incautious to dogmatize on this score, when the only

⁵ It is alluded to, and dismissed, in two brief references: pp. 226 and 227f.

field in which we might reasonably expect to find such laws (in the relationships between various human institutions) has not been carefully examined. Second, the failure to discover any *laws of transformation*, such as those sought by Plato, Aristotle, Vico, Hegel, Comte, Marx, Spencer and Spengler (the names cited by Cohen in this connection) by no means proves that laws of *functional relationships* between institutions may not be discovered. Third, if it is in fact strictly true that it is impossible to find any "universal relationships between repeatable elements" among institutions, then, on Cohen's own theory, no adequate understanding of these institutions and of their causal relationships is open to us.

III

In spite of these criticisms of what I take to be the two most essential elements in *The Meaning of Human History*, the work is one of genuine importance. It is also one which contains many suggestive treatments of problems incidental to the main argument. In this connection I might cite Cohen's admirable third chapter ("Importance and Possibility in History") showing that a consideration of "what might have been" is always an essential part of historical understanding. I might also cite his defense of the city, and his defense of an historical interpretation of the social contract. And last, but by no means least, there are the two closing chapters in which Cohen, with controlled pathos and moving dignity, seeks to find and to state the case for an illusion-free liberalism.

MAURICE MANDELBAUM

Dartmouth College

ETHICS

An International Journal of Social, Political,
and Legal Philosophy

T. V. SMITH and CHARNER M. PERRY, Editors

Department of Philosophy. The University of Chicago

ETHICS is devoted to study of the ideas and principles which form the basis for individual and social action. Its field includes such material from law, politics, economics, sociology, and religion as is relevant to the understanding of ideals or to the formation of policy. It publishes articles in ethical theory, political science, social science, and jurisprudence contributing to an understanding of the basic structure of civilization and society.

Founded in 1890, *ETHICS* is a leading quarterly in its field. It has attracted for its contributors and reviewers scholars of Europe and Asia as well as of English-speaking countries. *ETHICS* is not the organ of any group and is not committed to any policy or program.

ETHICS is published quarterly in
January, April, July, and October

THE UNIVERSITY OF CHICAGO PRESS

ALGEMEEN NEDERLANDS TIJDSCHRIFT VOOR WIJSBEGEERTE EN PSYCHOLOGIE 1906.

The main periodical, dealing with philosophical issues, in the Netherlands. Articles have summaries in English and French. It prints the Annals of the Society of Scientific Philosophy at Utrecht, which dealt with the problem of Time this year, and will deal with the 'Confrontation of the Science of Nature and the Science of Men and Culture' next year.

• 5 issues per year

Editor : The United Philosophical Societies in the Netherlands.

Editorial Staff : H. J. Pos, Chairman, K. Kuypers, Secretary,
Prins Willen v. Oranjelaan 14, Naarden.

Publisher : Van Gorcum & Comp. Assen.

Subscription \$4.00 yearly. Overseas \$5.00 yearly.

The REVIEW OF METAPHYSICS is an independently published philosophical quarterly devoted to the promotion of fundamental speculative and historical studies. It is the intention of The REVIEW to publish technically competent, definitive contributions, whatever their source. In furthering this work the Editor will be assisted by a Board of Consulting Editors, although final responsibility for the selection of all editorial content will rest in his hands.

Its rates are as follows :

Individual subscription (yearly)	\$ 5.00
Individual subscription (yearly foreign)	6.00
Institutional subscription (yearly)	25.00
Life Subscription	50.00
Charter Subscription	100.00

Charter subscribers receive three copies per issue.

Institutions may subscribe at the individual yearly rate; those however interested in the support of this journal may subscribe at the Institutional rate of \$25.00 yearly, for which they receive three copies per issue.

Charter Subscribers: James K. Folsom; Henry R. Luce; College of St. Rose; Loyola Seminary; Mt. St. Mary Seminary; West Berlin University; Woodstock College.

Life Subscribers: Brand Blauth; Henry Cohen; Charles Hartshorne; Francis S. Hinsrot; Charles Hendel; F. S. C. Northrop; Fr. Gerald Shalem; Marjorie Wyler.

INSTITUTIONAL SUBSCRIBERS

Bryn Mawr College
Harvard University
Smith College
University of California
University of Notre Dame
Yale University